PEDIATRIC CLINICS OF NORTH AMERICA

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Symposium on Adolescence

Lyman T. Meiks, M.D.
Morris Green, M.D.
Consulting Editors

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FOREWORD

LYMAN T. MEIKS, M.D.

MORRIS GREEN, M.D

Consulting Editors

During recent years there has been an increasing interest in trying to understand and to provide help for the problems that may arise during adolescence. Although difficulties during this age period have been with us for a long time, most physicians feel ill at ease with adolescent patients. The doctor is frequently consulted for advice that he may be unprepared to give, and he may be tempted to give flip, superficial answers or to ignore or minimize the difficulty.

Since the need for a summation and correlation of knowledge concerning this age period from many sources is so clear, we were delighted with the opportunity to arrange this Symposium. This was made possible by a substantial grant from Mead Johnson & Company. In recognizing that the problem is too large to be covered in its entirety, the focus will be on the ordinary difficulties that may be encountered by the ordinary physician. Thus such unsolved problems as big city gangs, education for the gifted child or the influence of formal religion will not be especially dealt with, although these are certainly matters of importance.

The participants in this Symposium are authorities in their respective fields. They were encouraged to enter into free and informal discussion. It is hoped that these Proceedings will serve to enhance the medical care of adolescent patients.

. . . Human life is divided into four ages. The first is called adolescence, that is, the 'increasing' of life. The second is called 'manhood,' that is to say, the age of achievement, which may give perfection . . . The third is called old age. The fourth is called decrepitude . . .

As to the first, no one hesitates, but every sage agrees that it lasts up to the twenty-fifth year; and because up to that time our soul is chiefly intent on conferring growth and beauty on the body, whence many and great changes take place in the person, the rational part cannot come to perfect discretion; wherefore Reason lays down that before this age there are certain things a man may not do without a guardian of full age. —Dante, *Convivio*, IV, 24.

Adolescence. The process or condition of growing up; the growing age; youth; the period between childhood and maturity, extending from 14 to 25 in males, from 12 to 21 in females.—*The Shorter Oxford English Dictionary*.

THE ADOLESCENT AND THE PRACTITIONER

EDWARD B. SHAW, M.D.

In discussing my assigned subject I have taken the title literally: the adolescent and the practitioner. In organizing my own thoughts I have deliberately not consulted the authorities in this field, although their writings are known to me. These experts will be here to develop their own views. From the vantage point of 38 years in pediatrics I am aware of the special problems of the adolescent as seen by the pediatrician in private practice. I should like to mention what these exact problems are, what medical care is required, and the sort of physician who is best suited to meet these needs. During this symposium we shall doubtless hear much about these questions. They include the acceleration of growth, the disparities of growth between individuals and between the sexes, the common matter of obesity, the unsightly and disturbing skin manifestations, the awakening of sexual powers, and the emotional uncertainty and bewilderment with which these phenomena confront the child.

Adolescence is the emergence from childhood into adulthood, and sexual maturation is an important segment of this period of life. Much has been written and a great deal may be said here about the psychologic aspects of this phase: the adjustment that must be made to menstruation, to the awakened sexual drive, and the newly encountered problem of the relationship between the sexes.

When I was a boy, at the turn of the century and at the end of the Victorian era, everything connected with sex was strictly unmentionable. I doubt whether this enhanced the level of sexual morality! Sex and all its attributes has today become an accepted topic for

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discussion in the church, home, school, magazines, radio, TV—an attempt to rationalize and make commonplace something which essentially is neither commonplace nor mundane. Somewhere between the extreme which regards human reproduction as evil and wicked—conceived in sin and born into iniquity—and the entirely factual acceptance by a brave new world is the appropriate middle ground which respects the shyness and awe of the adolescent regarding his initiation into the mystery and beauty of a new personal responsibility.

The chief difference of adolescence from other ages of man is that so many things happen so quickly. The boy or girl must adapt to increasing stature, changing voice, alteration in social relationships, the desire to be acceptable to the opposite sex—and all this at a time when he is personally insecure and unaccustomed to his new role. This happens to be the time when competitive efforts have suddenly become important to the child, the desire to excel scholastically, in athletics and in social activities.

The very number of its problems is not the sole reason for our concern with this age group. Each age of life has to make adjustments to new situations. The infant must hastily adapt to the appalling alteration from intrauterine to extrauterine independent existence. The toddler desperately seeks to assert himself as an individual and goes through a characteristic stage of defiance of authority during a time when he is still dependent and is usually beset by the numerous infections of early childhood. Kindergarten years and those of early school life present new competitions for the hitherto protected child together with the continuation of these numerous infections.

There are similar periods of stress even at more advanced ages of life. The individual must adjust himself to college, to the acceptance of an occupation, to marriage, and to the alterations imposed by childbearing, middle age and, finally, by senility. The waxing of adolescent sexual powers is not necessarily more devastating than the waning of sexual powers in the more mature years.

The teenager simply shares the universal human need for a health adviser, confidant and friend—someone in the role of the lamented old-time country doctor who is currently in such short supply. This requires a physician to provide total care, who can progressively uncover minor defects and early detect major illnesses. He must have knowledge of the problems and potentialities of the individual, of the family situation, and the relationship of the patient to his parents, siblings and, later on, his spouse.

Most of us are led into the practice of medicine by the desire to be physicians. Great physicians are to be found in every field of practice. I have discovered them in minor specialties whose primary concern is not expected to be in the problems of total care. The true physician and the wise practitioner has the greatest respect for the personal

dignity of his patients. Even in early childhood the child, not his mother, is the patient. The child must be encouraged to develop concern with his own problems, to accept his own responsibility for their solution, and to realize the interest of the physician in his status as a person. Very young children respond astonishingly well to this approach, and as this relationship is built up through the years there develops a warm and entirely comfortable relationship between the child and his physician.

The pediatrician sees his patient frequently through infancy. If he is adequate to his task, he learns to know all the special problems of the family and of the environment as they affect the child. The necessities of periodic care, immunization, preschool, school and summer camp examinations provide ready opportunity for continued contact with his patient. In early high school years the frequency of his visits necessarily diminishes; at this age most children enjoy relative freedom from the common infections of early childhood. Prescribed school and athletic examinations tend to become somewhat perfunctory. The child consults the pediatrician with increasing reluctance and resents sharing the office with crying babies and toddlers. Not only does the adolescent become a more unwilling patient, but also the pediatrician often shrinks from patients at this age, preferring, regrettably, to concern himself with the more routine care of small children. The teenager develops a certain shyness and insulation, traits which every parent will recognize, which makes him somewhat more difficult to approach. It is important that a relationship be developed in early life which may be extended to cover this important area.

Some years ago I was a member of an Academy committee charged to determine the span of pediatric practice. We agreed that this extended "from birth through adolescence" (there were a few wry remarks that adolescence was sometimes complete only at an advanced age). There is no reason why the habit of periodic health examinations through early years should not be continued throughout this later time of stress—if the pediatrician shuns this task, he misses a precious human relationship. The child's physician occupies almost the place of a member of the family—a source of trusted authority without any threat and a position of confidence and friendship without intrusion. The boy or girl should be able to discuss almost any problem without reservation. It may be necessary for the physician to augment his skill by the services of various specialists, but he should not relinquish his status for the total care of the child at this age.

Some of the most difficult problems of the teen-age child are to be resolved only by one who occupies this position of kindly authority with the adolescent who has been led to accept his own role in their solution. The obese child, unhappy in his social unacceptability, whose very frustrations cause him to eat more and more—much as the alco-

holic takes refuge in the bottle—cannot be helped by giving a diet to the mother and amphetamine pills to him. This patient must accept the beneficent authority of the physician and be made to recognize that dietary control is his individual concern.

A good converse example is the treatment of anorexia nervosa which can be effective only if the child is built up in his self-esteem to the point at which he—or usually she—accepts the problem as his own.

These illustrations will suffice to point out two of the most important time-consuming matters in this age group in practice. These might be extended in similar vein to all the important situations in this area to include most of those which involve health or behavior. Just as parents must learn that children require not only love and security (in which area there has been much concern), but also, at the same time, love and *authority*, so must the physician realize the stabilizing influence of his authority when coupled with friendship and kindness.

It is not too difficult to provide office arrangements which will not confront the adolescent with small children in the waiting room and provide him with surroundings which will establish his feeling of adulthood.

There comes a time, of course, when the relationship of a child to his physician must terminate. Children leave their pediatrician when they are mature—in happy contrast to the patients who leave their internists only when they die. Sooner or later a transition must be made to another physician; exactly when depends upon when the child becomes fully adult and upon the special interests and qualifications of the pediatrician and the point at which he ceases to be sufficiently adept in his program of total care for the patient of this age. I confidently believe, however, that most adults and most families desire the same sort of continued health supervision that I have just defined for the pediatrician in childhood. The continuing care of the young adult should certainly be of the same order.

Of greatest importance in this transition is the child who has a continuing health problem, the one with diabetes, epilepsy, a postpoliomyelitic problem, rheumatic fever, psychologic disturbances or other chronic disabilities of one degree or another who must adapt his handicap to the sterner competition of adult life. Both for the well child and for the one who is chronically ill this period must be neatly bridged. Neither minor nor major ills should encounter a hiatus when the patient has no trusted authority to consult until later adult years finally bring him again to a new physician.

There have been a number of pilot studies in the field of adolescent medicine which have progressed almost to the point of setting up a new type of specialty practice. These studies have been invaluable in demonstrating the needs which exist and the deficiencies of the

pediatrician in not going far enough or of the internist in not starting early enough. These studies have focused attention on many of the special questions of this stage of development, but there is nothing essentially new in these problems. This scrutiny has developed only better ways to meet them and has simply demonstrated the necessity for periodic health counselling throughout the period of growth. I doubt very much whether there has been demonstrated the necessity for a considerable number of specialists in the diseases of the adolescent. So long as change and growth of some sort or another persist throughout life there would seem to be only the necessity for an extension of the same type of medical care commonly provided for infants.

I have not meant to indicate that the pediatrician is the only suitable attendant for the adolescent or even for the child. Certainly many others contribute expertly to the medical care of infancy, childhood and early adult years. I prefer to insist on the word *physician* to indicate one who accepts the full responsibility of his calling, who meets the challenge with continuous kindly understanding and authoritative supervision which covers the whole child through his period of growth into adult status. It is necessary for such a physician, whether he be pediatrician, general practitioner or internist, to be made aware of the numerous advances which have been provided by the intensive studies of adolescence and of the contributions which have been made in the various specialties which have augmented the care of this age group. It is these things which I hope to hear in the ensuing symposium.

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DISCUSSION

DR. GALLAGHER. I rise now, not because I have anything new to say, but really to express my great personal pleasure in what Dr. Shaw has said and, also, to break the ice. Somebody always has to do this.

There are a few things that I can say to reiterate, though I will not put them as well, the things which Dr. Shaw has said.

The first thing that I would like to say is this: Over the last few years I have made some effort to get a little better care for the adolescent, to focus a little more attention on him. To steal one of Dr. Shaw's phrases here, I would honestly feel that all these efforts were conceived in sin if they have given birth to another specialty. Many of you have, I am sure, heard me say this. There is nothing further from my intention than that. I do not think the adolescent is the province of the pediatrician or the internist or the general practitioner, or anybody specially. I think he is the province of the physician who is interested in him, who is knowledgeable about his or her ailment, and who has a respect for him.

I think it is wonderful if the pediatrician will continue to take care of these young people when they become a little older. I think it is fine if internists will reach down and give them a hand. And I also think it is wonderful if the general practitioner will do this.

Adolescents are different from toddlers, and they are different from adults: they have somewhat different needs, their physiology is a little different, and they even have a few ailments that are different at that time of life. This, to my mind, however, does not make a new specialty.

In training doctors to take care of adolescents, you have a wonderful chance to make a doctor thoughtful, but this is just fortuitous.

There is another side to this. Although there are definite advantages in age-group care from the standpoints of training and research (in geriatrics as well as in adolescent medicine), there are also definite disadvantages in thinking only in terms of a limited period of life. I have this sort of thing in mind: Conceive, if you will, of a pediatrician who concerned himself only with little tots and their diabetes during the ages of 1 to 12. What an awful situation would arise out of that! We all know that we have to allow about 15 years for the dreadful aspects of diabetes to appear. This doctor who isolated himself in this ivory tower of strict age-group care could hardly give his patient the best in the way of preventive medicine if he concerned himself only with that limited period of life. If you are going to concern yourself with an age group, keep in touch with what happened before and what is likely to happen in the future.

I like to think that those of us who are dealing with adolescents are dealing with them in such a way that they will become happier, more effective adults, not just happier, more effective adolescents.

I was interested in what Dr. Shaw said about the toddlers in the pediatrician's office, and the feeling that adolescents resent being in the office with what they often refer to as brats, and that it does not work out well. I believe Dr. Shaw feels that this point has been overemphasized. I do, too. I think it is something to keep in mind, but it is my feeling that it is the way the doctor deals with the adoles-

cent, his turning his entire attention to that adolescent, that makes the difference. I suspect that if, over the years, an adolescent has had a good relationship with his doctor, and this doctor is his friend, he will laugh off or ignore these little tots in the office. Basically, it is the way the doctor deals with this individual that is the big factor, not the trappings. We, in our clinic, have to think of trappings. Ours are patients we have never seen before; we have to convince them of our interest in them. Some pediatricians have set aside special days to see these youngsters; and I know of one who swaps offices with an internist at certain times.

Another factor in this was mentioned by Dr. Shaw. It is not so much the reluctance of these youngsters to continue with the pediatrician and mix in with the little tots, as it is the reluctance of many pediatricians to continue to see these older people. This is a matter I think we should try to do something about. I do not think that all pediatricians should treat adolescents, but I think that many more of them could and should. Many who are now uncomfortable with the adolescent and who, therefore, think it inappropriate for them to treat them could be helped over this. I say this with confidence because, in our own clinic, we have seen this happen. We have also had failures along these lines. We have had young and competent doctors come to us who, when presented with the business of having to take care of an adolescent, were obviously uncomfortable and did poorly with them. We have tried hard to straighten them out, but have not always been successful.

There is real satisfaction in dealing with people throughout long periods of their lives, and I think it must be a sad thing to relinquish some of one's patients just when they get to be so interesting.

Dr. Shaw mentioned this business of authority, and that adolescents need somebody to tell them that there are limits. I think this is important. Continually Dr. Shaw was saying they need authority, and I believe this. What they do *not* need, and what they resent and what will ruin the whole thing, is *authoritarianism*. There is a vast difference between the two.

DR. TYLER. Of all Dr. Shaw's comments, one seemed most significant to me. That was his point about teaching the young child, who later will become an adolescent, the responsibility of being concerned with his own health. I would like to suggest expanding this to include all his own welfare. As a child psychiatrist treating adolescents, I find the child who has no motivation to be concerned with his own welfare most difficult to treat. He is ready to blame the adults for his failures, and he accepts any happinesses as just occurring, but unrelated to his efforts. This is one area in which the child and the mother should

definitely be encouraged early to allow the child to feel that he has a responsibility in caring for himself. To learn to take some responsibility, he must be allowed to feel the pinch when he does not participate actively. If he learns this in the health area, it will extend over into other areas. I have a strong feeling that, with our moving towards a no-workday attitude in the whole society, it is extremely important to utilize any opportunity to let a child learn the responsibility of caring for himself.

DR. SOLNIT. Dr. Shaw has surveyed pediatric considerations in adolescence in a stimulating manner. From the points that he has raised it would be possible to engage in two and one-half days of discussion. One of the considerations he discussed especially warrants a great deal of thought: that is, how the pediatrician helps the child to be able to identify with him in differing ways, so that, when the child is in the adolescent phase, this partial identification with the physician becomes a source of reassurance. This tie to the pediatrician makes it possible for him to come to his physician with his concerns about his physical growth, his social adaptation and his concerns about his future identity.

From the way in which Dr. Shaw presented it, one could see that it is not only being kindly that is involved, but also, as Dr. Tyler and Dr. Gallagher have indicated, the matter of being authoritative is important. The way in which this authoritative function of the physician is expressed is crucial.

If one bends down to shake hands with the young child, this may convey the basic attitude that the physician has a capacity to understand and accept the child, as well as to indicate he knows what is healthy or unhealthy for the growing child. The pediatrician conducts himself in such a way as to win the child's confidence without diluting his authoritative role.

Just as adolescence has the imprint of the solutions of earlier developmental crises, so will the doctor-patient relationship bear the mark of how the pediatrician has been working with that child and his family over the many years.

One gains the impression that many pediatricians limit themselves to caring for the child as long as he is young and dependent. From their approach to diagnosis and treatment one can see that they are assuming they will no longer care for the child after he has become the relatively independent adolescent. This is a pitfall that will make it difficult for both the physician and the child to continue their relationship when the adolescent epoch occurs.

If the physician is convinced that the mother-child dependency relationship is one that limits the child's and the mother's capacity to

use the doctor's attention, he should realize that by the time the child is three or four he is a full partner in the matter of encouraging the mother to shield him, protect him, and to take over for him in times of stress or discomfort. Often such dependency is sensible and necessary. When it is exaggerated and continues on into adolescence, one attempts to focus on how child and parent can find an acceptable separation from each other.

Frequently one has quite the opposite problem, that of the adolescent rebelling and trying to find out how to get help from parental figures without acknowledging his need for it. The pediatrician may play a special role in such rebellious strivings, because help from him is often acceptable. Help from the parent may be much needed, but not acceptable, because it threatens to weaken the teenager's self-confidence.

The parent-child relationship may have a negative sign on it by the time adolescence occurs, and you may find it all too easy to work around the mother or the father. I would advise some caution in this regard. Often adolescents are reassured by the fact that with their permission the doctor will talk with their parents without violating their confidences.

It is fruitful to consider adolescence as an epoch in human development that is comparable to other epochs such as infancy and the climacteric, because it is one of those nodal points where physiology and psychology are closely intertwined.

Dr. Little. A couple of things have come to my mind as I have heard the comments. I do not know whether, in the face of the current realities, one can at present lean on the pediatrician as the man who is going to deal with adolescents, although I personally believe this would be desirable. This is not what goes on, and I am not entirely clear why this is so and what one can do about it.

An unscientific survey that I ran with 20 pediatricians about a year ago, as to how many adolescents they saw, revealed that they saw almost none. It was unusual if anybody saw, as 5 per cent of his practice, people over 12 years of age. I am not sure that what I say is generally applicable or entirely scientifically valid, but I think that there is some truth to it. I suppose that this is due in part to the fact that we have not given pediatricians, in their training, anything which helps them to be very comfortable in dealing with an adolescent.

Another thing which intrigues me is that there may be something in the individual which directs him towards pediatrics and towards dealing with younger children. He may not be comfortable with adolescents or as comfortable with grown-ups as he might be.

I am also interested in Dr. Solnit's remark about the adolescent

having the pediatrician with whom to identify. I wonder whether this may not be more needed at present than in the past. I do not know whether this is so or not. It is important for the adolescent to have someone outside the family that he can relate to, identify with to a certain extent, and feel some confidence in. There are not many people such as this around for adolescents.

This question of authority touches on something, again, in which I have become more and more interested because it seems to me that our whole attitude towards authority has been scrambled in the last few years. I think this has meant that more children get into adolescence without having a fairly satisfactory way of relating to authority at this point than was formerly the case. I think that they have not been able to work through some acceptance of reasonable authority without necessarily feeling crushed by it. This may be because parents have been confused in how to use authority in dealing with children.

DR. MEIKS. It is my understanding that it is most unusual for an adolescent child to seek out a pediatrician on his own account. This is not a part of the culture that they have been used to. I wonder if this would not, in many cases, be a valuable opportunity for them, and I wonder if pediatricians have made this easy for them to do.

I imagine the average secretary would be completely flabbergasted if a 13-year-old boy called in for an appointment. Would it be proper that we do something to encourage this? If so, how would we go about it?

DR. SOLNIT. It may be a good idea if the adolescent can call up for his own appointments, provided this has been licensed by the parents.

One should keep in mind that the adolescent as a member of the family is able to strengthen his ties to his parents when his dignity and confidence are respected. In no way should the pediatrician convey the feeling that the physician is encouraging the conflict between the teenager and his family. By understanding and acceptance the pediatrician can promote the adolescent's positive relationship to the family.

DR. GRAY. An article appeared in the Louisville *Courier-Journal* a month or so ago describing an adolescent clinic in California. Many of my adult women patients have mentioned this article to me and have seemed extremely interested.

Our science reporter in Louisville, Robert Clark, an astute young man who writes very well, asked me if I thought an adolescent clinic would be formed in Louisville, since great interest had been expressed to the newspaper upon this brief report from California. Would you

tell us something of this progress in your state and the reaction of the public, the patients and the physicians to the adolescent clinic?

DR. SHAW. Yes, one was recently started at Children's Hospital under Dr. John Piel.

DR. GRAY. How is it accepted out there?

DR. SHAW. It has just started. Another adolescent clinic has been operating for several years at Permanente under Dr. Roth.

I want to emphasize this: The clinics on adolescence have done a great job in pointing out what the problems are. I believe they do not define the need for every community—I hope to be corrected on this if I am wrong. I think they simply point out gaps in medical care which should not exist.

May I conclude on this point: I tried to steer around the idea that only the pediatrician should take care of children, because, of course, the pediatrician is not the only one that takes care of the child. The general practitioner cares for many children. But each of these has been shown to have defects in carrying over his supervision into the adolescent period.

The temptation for the pediatrician, when he gets out of school and residency, is to start in by establishing pleasant, comfortable relationships with the obstetricians. He gets many little babies to care for, and he sets his whole plan for his first two or three years on taking care of infants. This is a production-line thing, but it is about the stupidest way to spend an entire lifetime that ever was. There is a challenge in the care of infants, but why should one be content to stop at this point? One's practice grows up, and this becomes just like the joy of parenthood. I mean, you watch over children during the years of growth. Why should one just run this little production line: immunization, monthly visits, increasing formulas, how many tablespoonfuls of this, and so forth? I do not know how anyone stands only this. Economically, perhaps, it is good business. The adolescent requires a lot of time, but I believe the man who wants to be a physician cannot always stay on schedule. He cannot insist that every patient require only 15 minutes. The occasional patient will require an hour—of course, everybody during the rest of the afternoon is annoyed at the delay. This is a necessity of intelligent practice. The pediatrician may make the mistake of just concentrating on the little baby in order to keep up with a deadly schedule.

The general practitioner faces the same difficulty in keeping up with a schedule because of the diversity of his services. He is more likely to be a good general surgeon than an adequate pediatrician. He may

give immunizations and simple directions for feedings, but may have great difficulties in keeping up with the necessities of continuous careful supervision through adolescence.

I thought I might get some disagreement on one's relationship to his patients. In my practice I have always tried to relate to the child with the idea that I was *his* or *her* doctor. It is important to establish this personal relationship to the child of being doctor, friend and authority (hopefully without authoritarianism), and this carries on well into early adult years and sometimes longer than that.

I have previously advanced my personal belief that "love and security" are not any more important to the child than love and *authority*. Children love to play games. They like to run with the ball, kick the ball or throw it, but it is just as important to them that there is an out-of-bounds, there is a whistle, there is a referee—all this just adds to the pleasure of the game. I have noticed with my own children in school that the tough teacher who marks closely, who holds to the assignments, who demands certain compliance with his authority, often commands a great deal of affection. Friendly authority is precious, I believe, to the growing child and perhaps to many older human beings.

DR. SOLNIT. Would Dr. Shaw say something about the mother who was formerly his patient? When she comes in with her child, does she have a special place, compared to other mothers?

DR. SHAW. Yes. (Laughter.)

BIOCHEMICAL EVENTS AT ADOLESCENCE

LYTT I. GARDNER, M.D.

What an adventure going out to Illinois at the age of thirteen. . . . But I felt awfully upset, which I supposed was just my excitement at going away. Then of course it proved to be the Curse, for the first time. I thought I was dying of tuberculosis, which in a vague way I knew caused hemorrhages. It must be a serious case because the hemorrhage had gone the wrong way. I wondered if they'd find me dead in the car the next morning. I guess they must have told the porter to take special care of me, because though I'd rather die than call for help, presently he asked through the curtain if I was all right. I said, "I guess I'm sick." "What seems to be the trouble lady?" To that I made no answer at all. I couldn't. With the intuition of a great gentleman he must have guessed, for soon after a large black hand came through the curtains and handed me a package.—Christopher Morley: *Kitty Foyle.*

Let us review some of the biochemical events at the time of adolescence. The principal endocrine glands which influence growth, leading up to the change called adolescence, might be listed as follows: the anterior pituitary, the thyroid, the parathyroids, the adrenals and the gonads.

The anterior pituitary and its tro'ic substances play an important role. The thyroid-stimulating hormo... (TSH) promotes an outpouring of the various thyroid hormonal substances from the thyroid gland. These thyroid metabolites play roles in linear growth, in skeletal maturation, in dental development and in the development of the central nervous system. The adrenocorticotropic hormone (ACTH), from the anterior pituitary, controls the orderly functioning of the adrenal cortex and is responsible for that gland's production of hydrocortisone, which is involved in the homeostatic maintenance of carbohydrate metabolism. ACTH also controls the production of adrenal

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androgens. These latter steroids are elaborated in increasing amounts during the years just prior to adolescence itself. The adrenal androgens are involved in male sex development, in sexual hair, and in adolescent growth in general. In addition to the androgens of the adrenal cortex, adrenal estrogens are also produced. These estrogens have a function which is not entirely clear, and represent one of the present frontiers in experimental clinical endocrinology.

Another trophic hormone, the follicle-stimulating hormone (FSH) in the male, stimulates spermatogenesis; in the female, the graafian follicle. The graafian follicle, in turn, produces ovarian estrogens. Whether the testicular tubules produce estrogen is not certain. An additional trophic hormone, luteinizing hormone (LH), is produced by the anterior pituitary. This influences the Leydig cells of the testis and the corpus luteum of the ovary. The corpus luteum produces progesterone and presumably also its chemical analogs which are involved in endometrial changes. The Leydig cells are believed to produce testicular androgen.

In addition to these trophic substances from the anterior pituitary, there is produced growth hormone. It has been a difficult substance to work with. It is hoped that in the future it will be possible to obtain data on concentrations of growth hormone in human plasma, as the new immunologic assay techniques are applied.[7]

Actually, relatively little is known about the parathyroid gland and its participation in adolescence. It has been difficult to approach this area from the biochemical point of view. Assay of the hormone is a problem. For that reason our present state of knowledge is not very adequate. We do know that there is a change in the cell type of the parathyroid at some point after early infancy. This change consists in the development of the eosinophilic cells as well as the water-clear cells. Early in infancy there is a preponderance of the water-clear cells of the parathyroid, and it is only later that the two cell types appear. Whether this is a factor in the fall of the concentration of serum inorganic phosphorus which is known to occur at adolescence is as yet not clear.

SALIENT EVENTS OF ADOLESCENCE

Let us review some of the landmarks of adolescent changes in boys and girls. About age 9 or 10 years (these are mean values) the bony pelvis of the female begins its growth, together with other developmental growth such as budding of the nipples. Ordinarily, boys do not show any remarkable changes at this time. Then later on, at age 10 or 11, there is further budding of the female breasts, with possibly some pubic hair. At this time there is just a beginning in the male of growth in the testes and penis. The next year, 11 or 12, there may be

changes in the vaginal epithelium of the female, with some pigmentation of the nipples. At the same age, for the male, a beginning of prostatic activity occurs. So we pass on, year by year, with the female slightly in advance of the male in these developments. In the female the onset of menses usually takes place at age 12 or 13.

There are certain biochemical changes which are responsible for the process of adolescence in the normal male. The production of gonadotropins from the anterior pituitary results in growth of the testes, and in turn there is androgen production from the testes. In addition, there is increasing production of adrenal androgens. The androgens from these two sources appear to play a complementary role in the adolescent male.

In the female the gonadotropins stimulate the ovary, which, in turn, produces estrogen and progesterone. The vaginal and uterine tissues respond to these hormones. The adrenal androgens are produced in greater amount at adolescence and show up in the urine as 17-ketosteroids.

It seems appropriate to mention the events which occur in the development of the ovarian follicle. The course of development of the ovarian follicle involves ovulation, luteinization, and finally the development of a corpus luteum. The excretion of estrogen is elevated during the proliferative phase by about the time of ovulation. Urinary pregnanediol excretion rises during the progestational phase and falls at the end of that phase, during the process of luteinization.

The urinary excretion of estrogen during the early years of childhood is almost nil. The problem of estrogen metabolism in adolescence and in adulthood is no longer as simple as it originally seemed. At one time it was thought there were certain ratios of androgen to estrogen which determined "maleness" versus "femaleness." This now appears to be a vast oversimplification. As more biochemical information has become available, it is now known that the quantitative excretion of the urinary estrogens in adult males versus adult females is not very different (when estimates are made by chemical methods).

Migeon[3] measured, by countercurrent distribution, estrone, estradiol-17-β and estriol in the urine of normal men and women. The amounts of the three estrogens are given below for two of his normal subjects. The total amount for a normal man, age 34 years, came to 48 micrograms per 24 hours, and, in the case of a normal woman, age 24 years, 24 micrograms per 24 hours (first part of her menstrual cycle). At a later time (19 to 21 days of her cycle) the total came to 55 micrograms per 24 hours. The difference in estrogen excretion by these two subjects is not great.

Thus the problem of estrogen metabolism is considerably more complex than it was first believed to be. We must reassess our con-

cepts of the role of endogenous estrogens in the normal male and female. Perhaps the polarization of meaning as connoted by the terms "androgen" (male) and "estrogen" (female) is no longer a useful concept in modern endocrinology. An example of this is shown in Figure 1. This graph shows the excretion of urinary estrogens by a girl with congenital adrenal hyperplasia at age 18 years. When given cortisone, she began having menses and showed other adolescent changes. It may be seen on the left part of Figure 1 that her urinary estrogens (fluorometrically measured) were over 90 micrograms per day before cortisone treatment. This is a large excretion of estrogens.

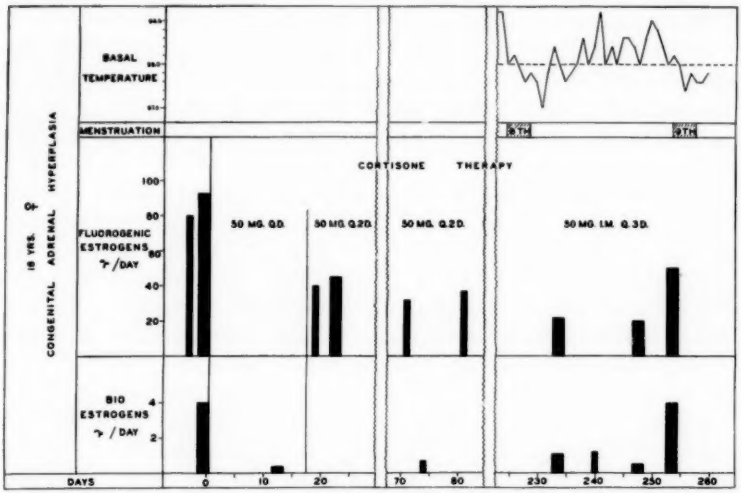

Fig. 1. Urinary estrogens in a girl with congenital adrenal hyperplasia during the onset of adolescence, induced by cortisone therapy. (C. J. Migeon and L. I. Gardner in *J. Clin. Endocrinol. & Metab.*, Vol. 12.)

Yet this child was completely masculinized, had a full beard, and demonstrated no evidence of the biologic effects usually associated with estrogen administration. When she was given cortisone, her urinary 17-ketosteroids fell, as did her urinary estrogens. She began to have normal menses, and probably ovulated as indicated by the temperature curve in the upper right-hand corner of the figure.

Figure 2 shows similar studies made on the 16-year-old sister of the first patient described. She too had congenital adrenal hyperplasia with excessive virilization. Figure 2 demonstrates the striking fall of ***both*** her urinary estrogens and 17-ketosteroids (i.e., androgens) when her abnormally increased adrenal function was suppressed with cortisone. Her urinary estrogens (fluorometrically measured) were in the range of 200 micrograms per day before treatment. After a month of cortisone

therapy her urinary estrogens were less than 25 micrograms per day. It can be seen on the far right of Figure 2 that this girl's first menstruation took place approximately 40 days after the first cortisone dosage had been begun.

These two girls were masculinized because of abnormal amounts of the 17-ketosteroids of the adrenal cortex and yet were excreting excessive amounts of estrogen. When treated with cortisone, their urinary 17-ketosteroids and estrogens fell, and apparently normal pituitary-ovarian cycles resulted. It should be pointed out that the abnormally high estrogens might have been antagonized by the high concentration of 17-ketosteroids. When Schorr and Carter[8] attempted to feminize

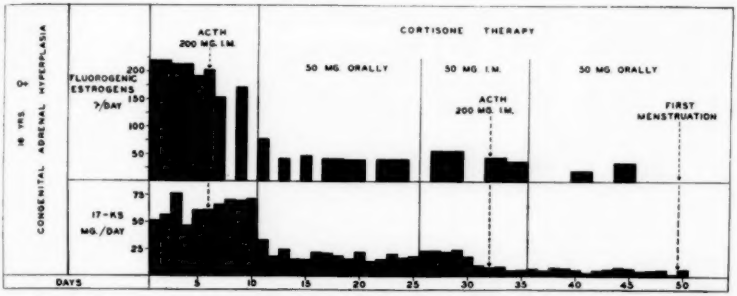

Fig. 2. Pattern of urinary estrogens and 17-ketosteroids leading up to the first menstrual period in a girl with congenital adrenal hyperplasia. (C. J. Migeon and L. I. Gardner in *J. Clin. Endocrinal. & Metab.*, Vol. 12.)

such a patient with estradiol benzoate therapy, they found it necessary to give as much as 30 mg. per day to achieve any change in the vaginal smear.

Let us now consider the biochemical aspects of the 17-ketosteroids in adolescence. The urinary 17-ketosteroids amount to only 1 or 2 mg. per day in infancy and begin to rise in the preadolescent years. There is a rather steep increase of excretion of urinary 17-ketosteroids just before adolescence. It should be noted that these substances, which are the end product of androgen metabolism, are excreted in the urine in thousandfold greater amounts (on a weight basis) than are the estrogens. From the technological point of view, this is an interesting point. The few micrograms of estrogens normally found in adult urine (15 to 30) have presented formidable technical problems for the (chemical) analyst. The 10,000 to 20,000 micrograms of 17-ketosteroids in a 24-hour urine sample are considerably easier to measure. This in part accounts for the rather early development of 17-ketosteroid chemical methods as contrasted with the much later development of chemical methods for estrogens.

Migeon and Plager[4] found that the principal 17-ketosteroids of hu-

man plasma are androsterone and dehydroepiandrosterone. Figure 3 compares data on plasma 17-ketosteroids and 17-hydroxycorticosteroids at different ages of development. Almost no 17-ketosteroids can be found in the plasma of the preadolescent child.[1, 5]

Plasma hydrocortisone (compound F) can be seen in Figure 3 to be pretty constant. This is the case in the 5-year-old, the 20-year-old or the 70-year-old, barring pregnancy, Cushing's syndrome or Addison's disease. On the other hand, there is a striking increase in the concentration of androsterone and dehydroepiandrosterone in peripheral plasma at the time of adolescence. This is presumably coincident with the increased excretion of the metabolites of these substances in the urine.

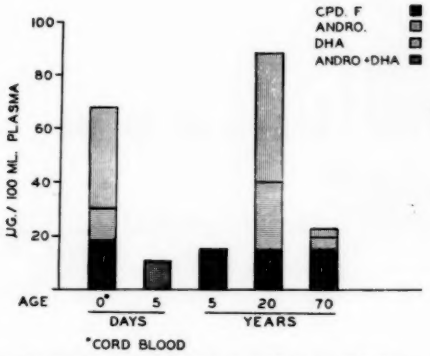

Fig. 3. Plasma corticosteroids and 17-ketosteroids from birth to old age in normal persons.

This increase in the plasma concentration of 17-ketosteroids is very likely associated with many of the maturational changes in osseous development which take place at this time. We know from extensive clinical observations that the androgenic steroids, when administered exogenously, have an effect in potentiating the speed of osseous maturation.

Finally, two other chemical events at adolescence should be mentioned: the fall in serum inorganic phosphorus and the reduction in activity of serum alkaline phosphatase (see Fig. 4). The diminution of serum inorganic phosphorus concentration actually begins in infancy. The values of serum inorganic phosphorus in the first year of life are 6 to 7 mg. per 100 ml. A gradual decline takes place during childhood. There is a break at the time of adolescence, with a fall of serum inorganic phosphorus to the adult concentration of about 3 mg. per 100 ml. in the postadolescent.[9] This phenomenon has led some persons to hypothesize that this change in serum inorganic phosphorus is due

to the cessation of production of growth hormone. Fortunately, this postulate can now be tested.[7]

Plasma alkaline phosphatase shows an increased activity in the first year of life. The alkaline phosphatase activity may be as high as 14 Bodansky units at this time. A diminution in activity occurs during childhood. The postadolescent exhibits the even lower adult activity of 2 to 4 Bodansky units. It is likely that these changes are secondary

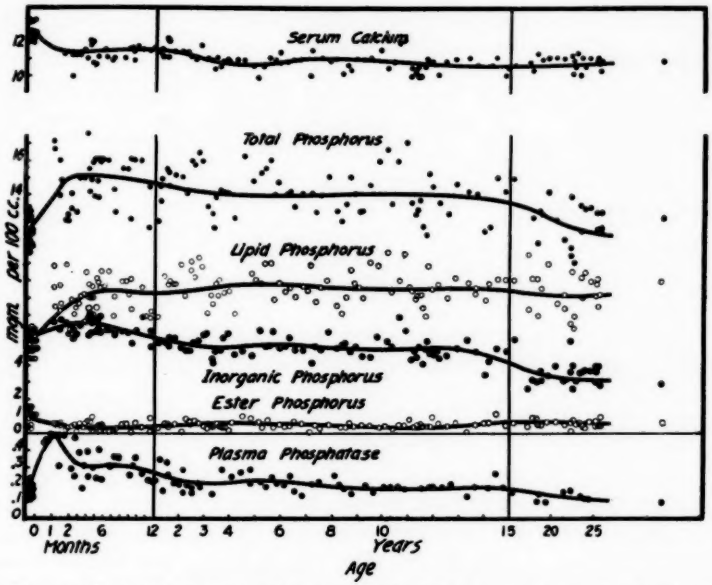

Fig. 4. Of special interest in this figure is the fall in serum inorganic phosphorus concentration and plasma alkaline phosphatase activity from infancy to adolescence. (G. Stearns and E. Warweg in *J. Biol. Chem.*, Vol. 102.)

to completion of osseous maturation. When bony maturation is abnormally accelerated as in untreated congenital adrenal hyperplasia, these changes in alkaline phosphatase activity also occur early.[6]

In the foregoing discussion some of the biochemical events at adolescence have been described. No particular attempt has been made to make an exhaustive catalogue of these. Rather, the writer has emphasized certain points which have not been dealt with extensively in previous papers on the endocrinology of adolescence. For detailed treatments of the endocrine changes in adolescence the reader is referred to the two standard texts in pediatric endocrinology (Talbot et al. and Wilkins).

Under General References are listed several publications which are

useful to the physician faced with the management of problems of the adolescent female. Of particular value is the perceptively written text by Goodrich C. Schauffler, which gives excellent coverage of organic disease in the adolescent. Although the present writer disagrees with Schauffler's empiric use of thyroid and estrogen medication in adolescent girls, Schauffler's broad and sensitive consideration of the manifold problems of adolescence in the female makes this text of unusual value to the practicing physician.

ACKNOWLEDGMENTS

The author is indebted to Drs. Lawson Wilkins and Claude J. Migeon, in association with whom several of the clinical studies discussed in this paper were carried out. Mrs. Betty Lawrence and Mrs. Artelissa T. Lipfert kindly prepared the figures.

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DISCUSSION

DR. LITTLE. Is there any evidence that in some of these individuals, particularly the hyperadrenal states, there are any qualitative or quantitative differences in the hormones they produce?

DR. GARDNER. The androgenic steroids found in the urine of children with virilizing adrenal hyperplasia vary considerably in total amounts and also qualitatively. That is to say, in one child one may find more androsterone than etiocholanolone. In another the ratio may be reversed. Some of these children excrete dehydroepiandrosterone (or some similar steroid) in sufficient quantities to give a positive Allen's reaction. The variations in the excretion of urinary *corticosteroids* have been well described by Bongiovanni and Eberlein (*Pediatrics*, 21:661, 1958). The relative amounts of corticosteroids and the C-19 steroids found in the urine of children with this condition do not necessarily bear any relationship to the normal adult pattern.

This is a genetically determined metabolic block, presumably involving the absence of an enzyme necessary for an essential step in the biosynthesis of hydrocortisone. A number of steroids pile up to the "left" of this block. One may be seeing excessive steroid metabolites which exist scarcely at all in the normal individual.

DR. SENN. What is known about the specific relationship between some of these chemical substances and affects, mood states? Does chemically determined adolescence result in emotional states?

DR. GARDNER. The girl with congenital adrenal hyperplasia whose menses we discussed as taking place regularly after cortisone treatment previously had not had any evidence of normal adolescence. She was 18 years of age. She was quite masculinized, had to shave every day, and had no breasts. Fortunately, she had a very perceptive mother who was quite aware of the condition and raised her as a girl without psychosexual confusion.

When she went into "cortisone-produced" adolescence, she showed euphoria. I think it was a perfectly normal reaction. In the instance of younger girls with virilizing adrenal hyperplasia who are treated with cortisone, we may have the problem of artificial precocious puberty. A 7-year-old girl with a bone age of 13 is likely to go into precocious adolescence when given cortisone. As has been shown by Wilkins and his colleagues, these children appear to respond to cortisone according to their bone age, not their chronologic age. Parents of these smaller girls who go into precocious adolescence need a certain amount of preparation and support.

In my own experience I do not think I have ever seen any particular association between the interpersonal behavior of one of these children and his or her biochemical state.

I recall a boy with untreated congenital adrenal hyperplasia who excreted 200 mg. of 17-ketosteroids a day, which is practically the record for this particular syndrome. Yet he acted just like a little boy his chronologic age, not his bone age. He was a very affectionate little boy at that time with no evidence of adult male libido. I have been rather impressed with the dissociation between concentrations of plasma 17-ketosteroids and interpersonal behavior in children.

DR. SOBEL. On the whole, the children I have seen with sexual precocity or virilism of any type seemed to act much more their actual ages than their "endocrine" ages. They certainly have been disturbed children, but I think the disturbance could be related much more to their being out of size and out of development in relation to their contemporaries than to any direct hormonal effect.

We did have one patient with congenital adrenal hyperplasia who had developed a problem of homosexuality by the time he was seven years old. Cortisone treatment did not help his emotional problem. Even though his difficulty may have been initiated by the excess steroid output (although I rather think it more likely resulted from his physical development and family situation), certainly it was not ameliorated when the amount of ketosteroids he was producing was reduced.

I wanted to ask whether you were implying there was one ACTH or more than one ACTH. I have been puzzling for quite a while about

why 17-ketosteroid precursors are produced in substantial amounts at adolescence and not before. It is hard to visualize that one ACTH secreted throughout life could be responsible for this peculiarity. Also, it seems that young children respond to ACTH differently than adults do; that is, they have relatively much less increase in 17-ketosteroid excretion than in corticosteroid excretion.

One could visualize that there is a second ACTH, or that a gonadotropin, as Dr. Albright felt, luteinizing hormone, is responsible for the change in adrenal function. Or perhaps an enzyme system in the adrenal cortex is maturing, in the harmony which one frequently sees in developmental processes.

Dr. Paulsen and I are trying to evaluate these possibilities now by defining the 17-ketosteroids and corticosteroids put out by children from infancy through adolescence, and their response to ACTH. One of the things we found out so far is that even collecting six days' output of urine from an infant does not give us enough steroid for identification by infra-red spectrophotometry. It makes one wonder whether this nice chart of Nathan Talbot's is showing 17-ketosteroids or simply chromogens. Much chromogenic material comes through one's extraction procedures, no matter how carefully they are carried out.

I disagree with you, as I suppose you know, about adrenal androgens having anything to do with the adolescent growth spurt. The only way one can evaluate their role is by studying the growth of children with adrenal insufficiency, and there are few of these. However, they do seem to go through adolescence and have an adolescent growth spurt just as well without functioning adrenals as healthy children do.

I am inclined to think that although the androgens when produced in excess by the adrenal, as in adrenal virilism, certainly are potent in stimulating growth and skeletal maturation, they probably do not play a role in the normal growth processes. Perhaps they do have a subtle role, but it would be difficult to find by standard measurement techniques.

I was very much interested in the slide you showed, which indicated that the rate of excretion of estrogens in the urine increased by about 10 years of age, while gonadotropin excretion was not demonstrable until a year or so later. I suppose this sequence of events could be an artifact, since the bioassay for gonadotropins (mouse uterine weight units) might not have been sensitive enough to detect the amount to which a child's ovaries would respond. Perhaps the assay method for estrogens was too sensitive, since 100 to 200 international units (estrone equivalents) were found by about 10 years of age. I am wondering whether the sequence shown could be a fact rather than an artifact. We know that small amounts of estrogen will stimulate gonadotropin production. We have seen this in young children who

accidentally or capriciously have eaten estrogen. I have seen the same thing in an 11-month-old child with an estrogen-producing ovarian tumor, who had a positive gonadotropin assay. It seems unlikely that the tumor was induced by the gonadotropin, but more the other way around. I wonder what you think about that.

DR. GARDNER. I think that is a very important point. I recently heard of a child with a proved granulosa-cell tumor who was excreting a measurable amount of gonadotropin. Previously some of us had felt that the finding of gonadotropin in the urine of children with isosexual female precocity was strong evidence against the presence of an ovarian tumor. This tenet is apparently no longer valid.

DR. HEALD. I would like to ask two questions of Dr. Gardner and Dr. Sobel. The first is about adolescent goiter, the easily palpable thyroid one finds usually in the female, but occasionally in the male. I have never read an explanation for this, nor am I aware of one. I wonder if there is anything new which would help explain this.

The other problem I would like to raise concerns hypothyroidism in the adolescent and deviations from the classic clinical syndrome of acquired hypothyroidism. The clinical picture presented infrequently is the thin, scrawny, dry-skin boy whose sexual maturation, growth and bone age have fallen behind. Protein-bound iodine drawn from such a child is just below what one would expect as normal values, 3 to 3.5 mg. per 100 ml. At least coincident with administration of appropriate amounts of replacement thyroid, their sexual maturation begins, and the physical findings seem to reverse themselves.

This is one thing we see occasionally in our clinic and are often puzzled by. What is your experience and your opinion about this sort of thing?

DR. GARDNER. I actually have no helpful thoughts about enlargement of the thyroid during adolescence. The interplay of these various endocrine feedback mechanisms in adolescence is something that needs more study.

I think if you find a low protein-bound iodine level in a child, of whatever age, with clinical symptoms reminiscent of hypothyroidism, you certainly are justified in treatment.

DR. SOBEL. I have seen at least one thin, hypothyroid adolescent. After all, to become overweight, they have to take in more calories than they put out. If a child normally is a light eater and eats less when he has the anorexia of hypothyroidism, there is no reason why he shouldn't be thin. He doesn't have to be fat at all.

DR. HEALD. Is the so-called fat that you see in acquired hypothyroidism, in the myxedematous state, truly fat?

DR. SOBEL. Some of it feels like fat. The overweight hypothyroid children I have seen would have to have a remarkable amount of myxedema to account for 15 or 20 kg. of excess weight.

DR. GARDNER. Have you seen many overweight hypothyroid children?

DR. SOBEL. I have, but they continued to be overweight when treated. They just happened to be overweight children. Certainly hypothyroid infants can be underweight even for their diminished size; they usually are not overweight. They eat poorly and usually look very malnourished.

The adolescent goiter is interesting. If you are referring to the enlargement of the thyroid which is characteristic of adolescence, that is normal. The presence of a palpable thyroid in a child with sexual precocity lends a great deal of support to the diagnosis of true precocity rather than estrogen ingestion or tumor.

When the enlargement becomes pathological, I am sure there is something amiss, but I do not know what. One can shrink the gland by thyroid treatment, without inducing thyrotoxicosis. There must be something more.

I have never yet been able to demonstrate a defect in thyroid function with any of the tools we are willing to use. Since we are not willing to use radioactive iodine, we probably miss some abnormalities of function. We do not like to use radioactive iodine, since we try to protect children from possible later development of thyroid carcinoma.

DR. HEALD. When does the size of the thyroid become abnormal?

DR. SOBEL. I usually feel if I can define the lobes clearly and not just guess, that the thyroid gland is larger than normal.

DR. JOHNSTON. The period preceding the onset of menstruation in the girl is characterized by an acceleration in the rate of growth and, in our studies, an absolute and relative increase in the basal metabolic rate; following the menarche, we observed a fall in the metabolic rate paralleling the deceleration in the rate of growth. Determinations were made every six days. We did not have coincident protein-bound iodine determinations.

Probably many of the pathologic happenings of the growth period relate to changing rates of growth. Over 80 per cent of the hyperthyroid problems seen in girls center around this age period. When

definite hyperthyroidism is observed in the premenarcheal period, it can be expected that medical management will result in a higher percentage of cures than at other age periods, since there can be hoped for the additive effect of the antithyroid drugs and the physiologic fall in metabolism that follows the menarche.

In the year following the menarche there can be anticipated a larger than average number of instances of hypothyroidism than at other periods. This is not to say that the fall in metabolic rate which is regularly seen is other than a normal physiologic process. However, there will be a greater number of instances in which it reaches pathologic levels than will be encountered at other periods. These present clinically with stories of easy fatigue, prolonged menstrual flow, slipping in school performance, and on physical examination can be expected to show among other things a narrow pulse pressure and a secondary anemia. In a study of 50 adolescents with menstrual irregularities, 20 showed some evidence of hypothyroidism, and these complaints were relieved with thyroid medication. It is, of course, possible that our experience is colored by residence in a goiter belt.

I would like to ask Dr. Gardner's opinion on the management of another group of patients. This is the group who come asking for help in speeding up what they consider a delay in sexual development. Specifically, I have in mind a bright lad of 16 who had not yet entered the spurt of growth that precedes puberty. He enjoyed athletics, but was too embarrassed to undress in gym before his classmates. I explained to him and to his father that he was still within the normal range and even showed him some of Gallagher's photographs that bring out the normal variation so nicely. Father and son still felt that the situation was too disturbing to be handled by watchful waiting. With small doses of testosterone he gained 7 inches and 49 pounds in the next 2 years, as well as showing good development of secondary sex characters. He entered the university at this time, feeling that physically he now compared favorably with his classmates.

DR. GARDNER. I think you are really in a dilemma. One must not forget that "initiating" a boy's adolescence with testosterone treatment may in itself generate deep-seated anxiety that his manhood depends on pills. Of course it really may not, since in such a patient there may have been delayed normal adolescence but for the therapeutic interference. I suppose it is better to stick it out as long as you can. If the boy has not begun his adolescent development before 16 or 17, we begin to think about doing a urinary FSH. If he is, in fact, suffering from end-organ deficiency, he will sooner or later begin to show excessive urinary gonadotropins. I feel that objective evidence of end-organ or pituitary deficiency should be obtained before any androgenic replacement is used.

As for the adolescent who is tired, has some menstrual irregularities and isn't doing well in school—I think one must be cautious in entertaining the diagnosis of hypothyroidism. Certainly the basal metabolic rate can be relegated to the limbo of the past. One somehow suspects that the effect of thyroid therapy in these adolescents is more psychotherapeutic than biochemical. If this be so, the physician is giving his psychotherapy unconsciously. Perhaps it would be better if he were quite aware that he is engaging in this rather demanding discipline.

DR. SEGAR. I would like to ask concerning another dilemma that at least I have encountered. That is, a 4- or 5-year-old girl, with the adrenal syndrome untreated, has skeletal maturation of an 11- or 12-year-old. If you treat her, she soon develops breasts and starts menstruating. Is this preferable to not treating her?

DR. GARDNER. This is a very interesting situation which we are beginning to see more and more. The child of *this* age with virilizing adrenal hyperplasia presents you not only with the problem of explaining to the parents the complicated nature of the genetic biochemical error, but also the problem of precocious puberty superimposed on this.

I do not know any solution but just spending time with the parents. It is important to try to assess their ability to handle two problems of this complexity. Having done so, one must make a decision as to whether you think they can face it. Usually parents are able to manage the two problems at once.

DR. SEGAR. We have treated two such children, and the parents have been pleased with the results despite the fact that one, a six-year-old, is starting to menstruate. The parents felt this was less disturbing to the child than the way she was before.

DR. GARDNER. If you discuss with them all the adverse aspects of failure to give corticosteroid treatment, my own personal experience has been that parents usually find themselves able to face the complications of giving therapy.

DR. GRAY. Am I correct in thinking that, ordinarily, you consider the changes in the newborn to represent congenital adrenal hyperplasia, on the one hand, and the changes that occur at puberty as acquired adrenal hyperplasia? Are the cases in the newborn more rare than those that appear at puberty?

DR. GARDNER. You are referring to a child at puberty who *develops* enlargement of the clitoris?

DR. GRAY. Yes.

DR. GARDNER. Whose urinary 17-ketosteroids are elevated?

DR. GRAY. Yes.

DR. GARDNER. This must be rare. I have personally seen only two cases of what we call postnatal virilizing adrenal hyperplasia. They have been females. They have no urogenital sinus, but rather normal genitalia save the enlarged clitoris. During infancy they develop enlargement of the clitoris and all the biochemical findings that we associate with virilizing adrenal hyperplasia. I have never seen this in an adolescent.

DR. GRAY. What about the acquired?

DR. GARDNER. I have never seen this syndrome in adolescents. I have seen one case in an adult. It must be extremely rare. I know of only about three such cases of postnatal virilizing adrenal hyperplasia in small children.

DR. GRAY. Of the 30 or more cases that Dr. Wilkins has treated in adolescence, did they have adrenal cortical hyperplasia from the time of birth?

DR. GARDNER. Yes, they were born with it, what we call congenital adrenal hyperplasia. The adolescent girls I presented earlier were born with it. There are at least seven subvariants of this condition, one of which we call postnatal virilizing adrenal hyperplasia.

DR. SOBEL. I have seen one such child, but I do not know where the enzyme disturbance is different. I suppose one could visualize an impairment of less severity, although of the same kind.

DR. HUBER. I wonder if you have any idea what triggers the developmental changes. In the precocious developing child you find nothing different, often, from a biochemical standpoint than you do when it occurs at the usual age.

DR. GARDNER. In isosexual constitutional precocity? I am not aware of any work that has as yet identified what triggers it. I would like to hear about it if anyone else knows. I am not aware that our knowledge of the hypothalamus has gone that far.

DR. HUBER. Do you think that is a justified statement?

DR. GARDNER. Poetic license! I have no proof that the hypothalamus is the culprit.

The great event of a boy's life is the awakening of sex. He will bathe many times a day, or get up at dawn and having stripped leap to and fro over a stick laid upon two chairs and hardly know, and never admit, that he had begun to take pleasure in his own nakedness, nor will he understand the change until some dream discovers it. He may never understand at all the greater change in his mind.—William Butler Yeats: *Autobiography: Reveries over Childhood and Youth*.

METABOLIC AND NUTRITIONAL CONSIDERATIONS IN ADOLESCENCE

JOSEPH A. JOHNSTON, M.D.

In this discussion the term "adolescence" will describe that period of growth that begins with an acceleration in rate preceding the attainment of sexual maturity, merges into a decelerative phase and terminates with the cessation of skeletal growth. In the girl, contrasting rates of growth will be separated approximately by the menarche; a point roughly corresponding to this in the male, the appearance of spermatozoa, may be expected two years later. In both sexes there is individual variation in the timing of the process, with a range of at least five years for the occurrence of puberty. The chart reproduced from Shuttleworth (Fig. 5) illustrates the point well.

It is of first importance for the understanding of the metabolic phenomena of the period that the events be plotted against the timetable of physiologic rather than chronologic age. Different problems will present in a 13-year-old girl, depending on whether she is prepubescent or postpubescent. For this reason the physician is more interested in the secondary sex characteristics as a guide and timetable than in chronologic age. In the order of their appearance these are, in the girl, as follows: (1) increase in the transverse diameter of the pelvis; (2) development of the breasts; (3) change from alkaline vaginal secretion to a strongly acid one; (4) appearance of pubic hair; and (5) axillary hair. The first menstrual period can be expected to occur between the last two. In the boy the puberal phenomena make their appearance over a two-year period in the following order: (1) increase in size of the testes and penis; (2) swelling of breasts; (3) appearance of pubic, axillary and facial hair; (4) change in the voice; and (5) production

From the Department of Pediatrics, Henry Ford Hospital, Detroit.

of spermatozoa. This item is not practicable of demonstration, but is considered to coincide with curliness of pubic hair.

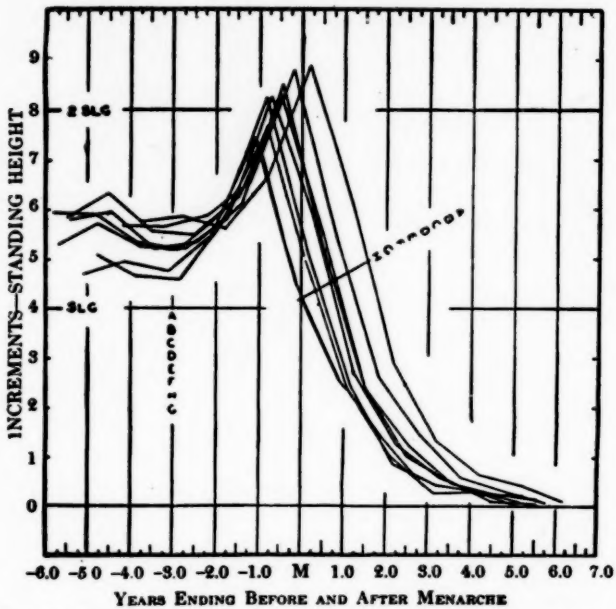

Fig. 5. This chart brings out the fact that the growth patterns of girls maturing at ages that vary from 11 to 15 are similar only when plotted in terms of physiologic age. Annual increments in standing height of 8 groups of girls who attained menarche at different ages. The curves are arranged so that the points corresponding to the menarcheal age are on the same vertical line. The 3 horizontal grid lines indicate, respectively, zero growth per year, one ninth of the average growth from age 8 to 17 (SLG), and two ninths of the average growth from age 8 to 17 (2 SLG).

Standing Heights and Menarcheal Ages of Each Group

GROUPS	AVERAGES OF STANDING HEIGHT IN CM.	AVERAGES OF MIDPOINTS OF MENARCHEAL AGES
A	144.52	11.00
B	151.60	11.75
C	153.25	12.25
D	152.33	12.75
E	155.16	13.25
F	154.92	13.75
G	153.20	14.25
H	154.87	15.00

(From Shuttleworth: *Monographs of the Society for Research in Child Development*, 2, National Research Council.)

NATURE OF GROWTH IN ADOLESCENCE

Growth in adolescence, plotted in terms of height and weight, follows a sigmoid curve. A sharp acceleration, amounting quantitatively to a doubling of rate, precedes puberty and merges into a decelerative phase terminating in cessation of skeletal growth. There are certain implications in this type of curve which have clinical significance. During the accelerative phase the capacity to retain nitrogen and calcium is so strong that suboptimal intakes may still result in positive balances; these same levels of intake will fail to produce a positive balance in the postpuberal decelerative phase. To the extent that nutrition plays a role in resistance to infection, the importance of providing adequately for structural substances during this time would seem to be obvious. The reciprocal nature of the curves of mortality and growth in animals is well brought out by Brody.[1]

BASAL METABOLISM

A rise and fall in growth rate can be presumed to be paralleled by a rise and fall in the rate of oxidation. Topper and Mulier[13] reported such a finding in the adolescent. Lewis[9] felt that her group could not

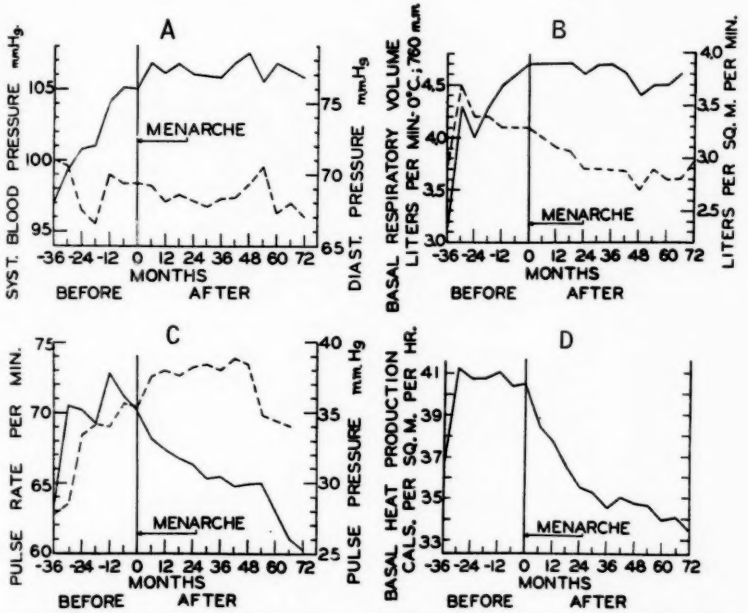

Fig. 6. Data on 4 physiologic functions as related to the menarche. (Reproduced from N. W. Shock: *Am. J. Physiol.*, Vol. 39.)

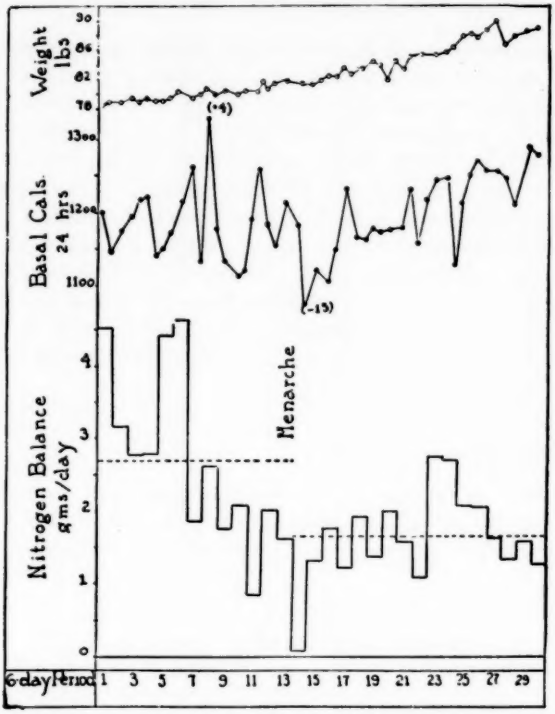

Fig. 7. Metabolism at puberty. The basal metabolic rate is fluctuant in this well trained subject, the range of basal calories being 200. There is a tendency to high rates just preceding and to lower rates following the menarche. (Rates calculated on Boothby standards.)

show an absolute rise, but did bring out a diminution in the rate of decrease which could be interpreted as a relative increase. Shock's[11] charts (Fig. 6) show such a plateau. The changes will be missed when data are averaged and plotted against chronologic age because of the individuality of the time of occurrence of the puberal phenomena. Our studies were made on normal girls at intervals of six days concurrently with determinations of the nitrogen balance on a constant diet. We observed a relative and absolute increase in the metabolic rate preceding and a fall following the menarche[3] (Fig. 7).

DIETARY REQUIREMENTS

Calories

The requirement for calories will follow the rate of metabolism, and here again can be predicted best against a scale of physiologic age.

This is well brought out in the chart reproduced from Wait and Roberts[14] (Fig. 8). A simple approach to the estimate that we have found useful in the diabetic is multiplication of the basal prediction from the Wetzel grid by the factor 1.9. The factor suggested by Wang[15] from actually determined basal figures was 2.0. In the tuberculous adolescent with restricted activity it was 1.7, about 20 per cent more than one would expect with bed rest and no fever, a function presumably of the toxicity of the tuberculous process.

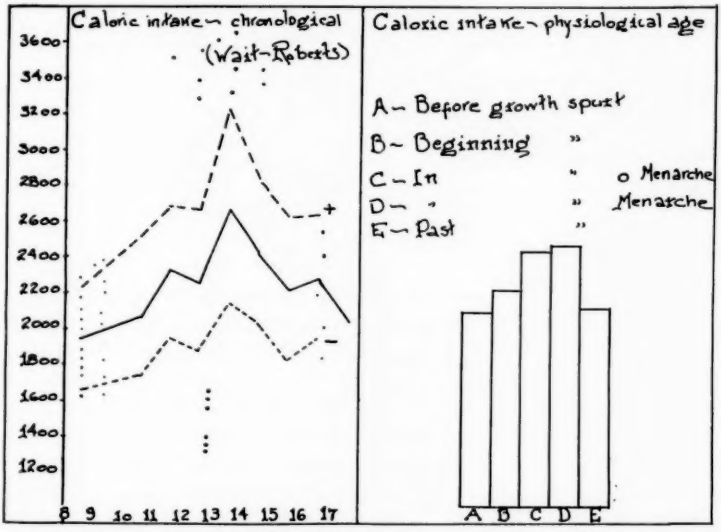

Fig. 8. The scatter in the left-hand chart is in part a function of the difference between chronologic and physiologic age. At rest none of the adolescents in this study required more than 2400 calories. (From B. Wait and L. J. Roberts: *J. Am. Dietet. A.*, Vol. 8.)

Protein

We have previously shown[10] that with the calorie requirement satisfied, consistently positive nitrogen balances were obtained only when 15 per cent of the calories were derived from protein. Lower intakes are compatible with growth, but negative balances for nitrogen will be met by a fall in basal metabolism (Fig. 9). Clear evidence of a correlation between the adequacy of the protein intake and the course of both tuberculosis and rheumatic fever has been adduced.[5, 6] On the other hand, amounts of protein in excess of 20 per cent of the calories frequently provoked a syndrome of intoxication characterized by anorexia, pallor and nausea. At these levels the phenomenon of a

"physiological ceiling" might be encountered, the excessive intake merely resulting in increased urinary loss. Such amounts were more commonly refused than eaten. The converse of this, however, was not true. In a study of 12 adolescents, only 4 took by choice an optimal amount of protein, seeming to prefer carbohydrate. This, we feel, is a function of patterns established in the home and calls for some positive direction of the intake in this age group. At the level of 2400 calories the recommended amount of protein would be contained in the following items:

	PROTEIN (GM.)	CALCIUM (GM.)
Milk, 1 quart	28.8	1.15
Egg	6.0	0.03
Meat, fish or cheese, 2 large servings	46.0	0.32
Cereal, 1 serving, and bread, 3 servings	13.0	0.07
Dessert, containing milk and egg	3.5	0.10
Total	97.3	1.67

Calcium and Vitamin D

The available literature on the requirement of calcium and vitamin D in this age period is reviewed in another publication.[4] Our conclusions in a study of 9 normal girls were as follows: An average daily intake of 1286 mg. of calcium (range 1100 to 1500) resulted in an average retention of 410 mg. (range 237 to 649), or an intake of 28 mg. per kilogram of body weight (range 21 to 35) resulted in a retention of 9 mg. per kilogram of body weight (range 4 to 14) without ingestion of supplementary vitamin D. Vitamin D (as viosterol) increased the retention of calcium, and the increase paralleled the amount of vitamin D ingested up to 3900 U.S.P. units. In Wang's[15] studies the intake averaged 1600 mg., and the retention, 400 mg. per day.

The amounts of vitamin D given to these older children when considered in terms of units of the vitamin per unit of body weight are comparable to the smaller amounts used for infants, though there is no proof beyond these increased retentions that the requirement for this vitamin is related to body size It seems more likely that the amount required may be related to the variations in the speed of increase in body length; the requirement would therefore be increased during the period of accelerated growth in height preceding sexual maturation.

There is a threshold, just under the average intake, below which no retention occurs, and there is a physiologic ceiling beyond which increased intake does not promote further retention (Fig. 10). The margin of safety to ensure storage in girls at puberty is small, and the data obtained from this study confirm the need for about the amount of calcium contained in a full quart of milk per day during the

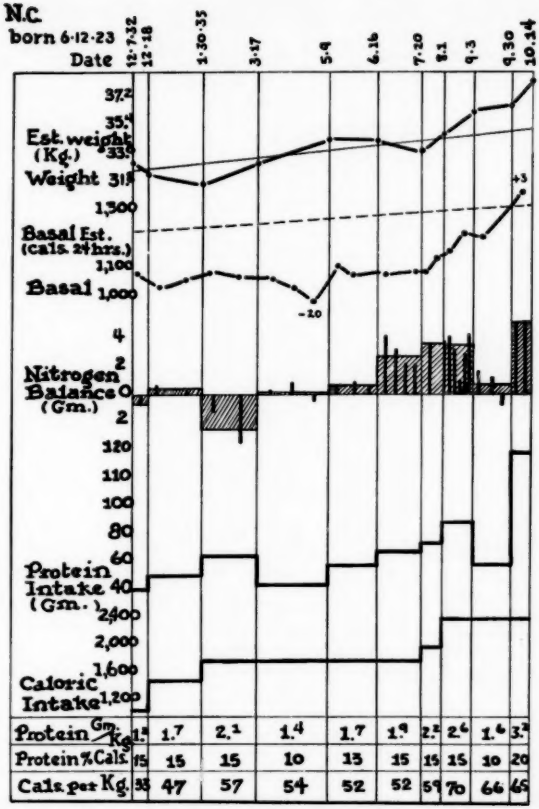

Fig. 9. Effect of suboptimal intakes. Weight may continue to rise with protein inadequate for normal retention. Part of the adjustment involves a depression of basal metabolism. Increase of caloric and protein intake was followed by a rise in the B.M.R. from −20 to −3 Boothby.

puberal period. A liberal intake of vitamin D at this period is desirable. The administration of amounts varying from 650 to 3900 U.S.P. units of vitamin D in the form of a concentrate was paralleled by increases in the amounts of calcium retained; within this range no evidence of a depressing effect with the higher doses was noted.

In substance it can be said that the amounts of calcium required for the adolescent are usually met when she receives the amount contained in a quart of summer milk. We felt we could definitely show a need for additional vitamin D and that there was a direct correlation between the amounts used and the retention of calcium.

Slipping of the upper femoral epiphysis represents a condition sharply limited to the accelerative phase of growth. Characteristically,

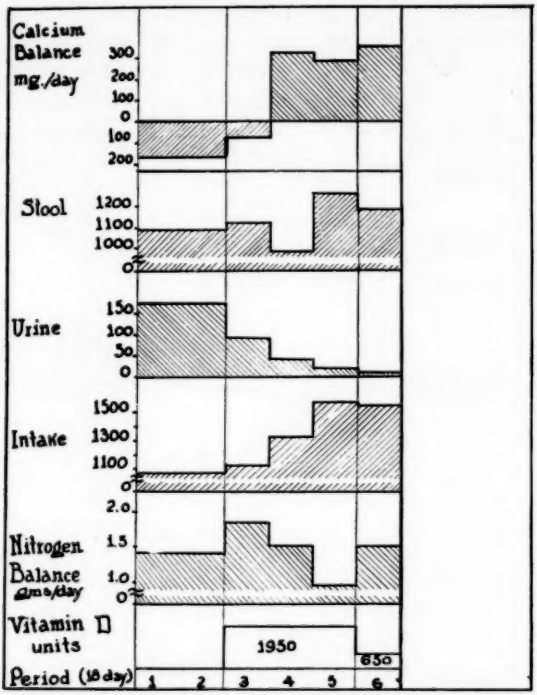

Fig. 10. Variations in intake of calcium and vitamin D in a girl, aged 10 years and 9 months, with scoliosis. No retention of calcium occurred until the intake reached 1343 mg. per day, though the range between 1140 mg. and this figure was not explored. Ingestion of vitamin D reduced the extent of the negative balance with a calcium intake of 1140 mg., but did not make it positive. Increases in the intake of calcium beyond 1343 mg. resulted in no significant increase in retention.

it occurs in the overweight child. This recalls an old observation of Hess on the relation of gain in weight to calcium retention. The more rapidly the growing animal was permitted to gain weight, the more florid the rickets that resulted from the Steenbock diet. We[7] could show poor or no retentions in seven of this group, correctable by vitamin D. The pediatrician supervising the growth of an adolescent should anticipate the possibility of the occurrence of this disorder in his overweight patients and attempt to promote a plateau in the weight curve, and provide a diet adequate in calcium and vitamin D.

INFLUENCE OF EMOTIONAL FACTORS ON THE NUTRITIONAL STATE

The role of emotion in the development of obesity is stressed by Bruch.[2] Recourse to food as a solace for emotional conflicts in school,

home and the peer group of both sexes is thoroughly documented. No approach to the management of the obese child which depends on outlining a restricted diet can be expected to succeed. A thorough probing into the child's discontents, his parents' attitudes, his scholastic progress, and his relations outside of home and school is basic to an analysis of his problem.

Any and all of these factors may be found to be etiologically important in the opposite state, the emaciation resulting from anorexia nervosa and attacks of recurrent vomiting.

THE ADOLESCENT DIABETIC

The prepuberal rise in the caloric requirement and insulin need followed by the fall in both these items in the postpuberal period can be anticipated so that they do not come as a surprise to the teenager. This, too, is the age at which the vascular and renal complications begin to make their appearance, and the inclusion of a funduscopic examination, determination of blood pressure, and urinalysis for elements other than sugar should become routine.[8]

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GYNECOLOGY IN ADOLESCENCE

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Adolescence has become a topic of great interest to the thinking adult of our time, particularly because of the social, moral and legal aspects of the deviations from the standards which are accepted today. This intense energy associated with adolescence and the apparent feeling of repression and desire to achieve recognition within their own little society seemingly are the cause for serious repercussions in our social order. The philosophical aspects, the legal implications and the pattern of social behavior are matters that require great concentration and thought. But, in addition to these broad aspects of adolescence, increasing interest has developed in gynecology in recent years. In these gynecologic studies the individual young woman is the complete interest, but an analysis of many factors in gynecology may allow some broader opinions that may be valid.

The term "adolescence" is derived from the Latin verb *adolescere*, which means "to grow." In our interpretation the term is used to indicate the period of beginning sexual maturity up to full sexual maturity. This includes the span when the estrogenic hormones are beginning to change the childhood girl into the young woman. These changes begin one, two or more years before the onset of menstruation. Sexual maturity may be considered to have arrived ordinarily by the age of 18 years, although actually this is not entirely true, because the gradually enlarging and developing pelvic organs continue until the age of 25 years in a large proportion of women. By the age of 18 years young women are considered mature enough to assume the responsibilities of marriage and to bear children, which always hastens maturity of the secondary sex organs. Without pregnancy, that full maturity may be delayed for several more years. However, it seems

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that since women's suffrage a respectable age of marriage, and a not unexpected age for pregnancy, should be considered the dividing line between adolescence and maturity. Our use of the term "adolescence" is essentially synonomous with the "teen age."

Locke,[6] in 1956, reported 254 patients from infancy up to the age of 20 who had been examined for gynecologic conditions. Fifty were ordinary prenatal cases, six were for premarital examinations, eight had urologic disease instead of gynecologic disease. In 52 patients there were organic pelvic lesions, including 5 cases of salpingitis, 3 of vaginitis, and 12 of congenital abnormalities. In 36 patients there were functional complaints of dysmenorrhea or metrorrhagia. Seven of the 32 with metrorrhagia had curettage. Locke concluded that the gynecologic problems of the adult are not infrequently seen in the adolescent.

Keettel,[5] in 1956, reported no cases, but discussed preadolescent and adolescent gynecology. Barnes,[2] in 1957, discussed the gynecologic problems of adolescents, but reported no cases. She pointed out that there was often instability of the vasomotor system, with pallor, blushing and tachycardia. Often there was a tendency to defy authority. Epilepsy, migraine, asthma and skin diseases, especially acne, were prone to appear during adolescence. With full maturity these conditions often disappeared. She pointed out that the patient should be interviewed alone, and that the examination should be complete and careful. A sensible outlook of the hygiene of menstruation was thought important. Precocious puberty was interpreted as the occurrence of menstruation before the age of eight years, mainly caused by premature development of the pituitary gland, and often associated with large follicular cystic ovaries. Granulosa cell tumors, and tumors and cysts of the hypothalamus, were rarer causes of precocious puberty.

Recently Allen[1] has pressed the point of examination of the genital organs in the prepubescent and adolescent girl. He reports the examination of 255 private patients from the ages of 3 to 17 years. In this group, dysmenorrhea was present in 44, menorrhagia in 29, irregular menstruation in 21, vulvitis in 18, yeast vaginitis in 16, amenorrhea in 14, metrorrhagia in 11, pregnancy in 11, retroversion in 6, breast cysts in 6, adhesive vaginitis in 4, cervical erosion in 5, pelvic pain in 3, teratoma of the ovary in one, and a few other rare conditions in individual cases. Allen felt that false modesty or Puritanism exists with the physician, that too much effort has been expended to avoid examination in order to protect the young girl's virginity, which he calls a state of mind. He stated: "The . . . intact . . . hymen is a pathologic entity." He suggested that children be brought for pelvic examination at the age of seven years, at first having cursory examination; but on later visits the examination should be thorough and complete.

Gelperin[3] has pointed out that nearly a million new cases of gonor-

rhea occur in the United States each year, and that about 20 per cent occur between 15 and 19 years of age. He stated that promiscuity is somehow accepted as a part of growing up. He felt that private practitioners, as well as Health Departments, have done poorly in control of this disease, and that they must accentuate education for personal and family living.

The present report is based on a study of 200 private patients who presented themselves to the gynecologist for examination, between the ages of 13 and 17 years. All were either menstruating or showed a well marked estrogenic effect, except four who had primary amenorrhea.

TABLE 1. *Gynecologic Conditions in 200 Girls*

CONDITION	AGE (YEARS)					TOTAL NUMBER OF PATIENTS
	13	14	15	16	17	
Dysmenorrhea	1	9	5	14	26	55
Metrorrhagia	5	4	5	3	7	24
Pelvic pain	4	1	5	4	8	22
Oligomenorrhea		3	4	3	8	18
Discharge		4	1	2	6	13
(Trichomonas, 4)						
(Monilia, 3)						
(Cervicitis, 6)						
Secondary amenorrhea	1	1	1	4	3	10
Delayed menses	1	3	1	1		6
Pregnancy			4	2		6
(Abortion, 1)						
Salpingitis				2	2	4
Menorrhagia	1	1	1	1		4
Primary amenorrhea			1	2	1	4
Acute appendicitis	1		1	1		3
Obesity		3				3
Epilepsy		2	1	1		4
Hirsutism		1	1			2
Adrenogenital syndrome					1	1
Ovarian tumor		1			1	2
(Granulosa, 1)						
Breast tumor			1			1
(Intracannicular)						
Papilloma of nipple			1	1		2
Bleeding nipple		1				1
Unilateral hypertrophy				1		1
Virginal breast hypertrophy				1		1
Mastalgia				1		1
Breast striae			1			1

DYSMENORRHEA

There were 55 patients who complained primarily of dysmenorrhea, an incidence of 27.5 per cent. It is of particular interest that only one was age 13, nine were 14, five were 15, fourteen were 16 years of age,

and the largest number, 26, were 17 years of age. This is to be expected, since the average at the onset of menstruation is considered 13.5 years. For the first two years of menstruation there is anovulation as a rule, and during these early years there is no discomfort with the menstrual flow, regardless of how small the uterus may be. The uterus of the child at the onset of puberty is small, the corpus measuring about 4 by 2 cm., and sometimes smaller. In some instances dysmenorrhea occurs with the first menstrual period and continues through the adolescent years. It is our understanding that this smaller group must have begun ovulation with the first menstruation, but, as a rule, the menstrual pain appears at 15 or 16 years of age, may become even more severe at 17 or 18, often continuing into the 20's, at times disappearing by 22 years of age, but perhaps continuing until 25 years. The most consistent finding that we can associate with this dysmenorrhea is the size of the uterus. As soon as the uterus has developed to an essentially normal size, the menstrual pain disappears. As long as the uterus continues small, or shows relatively little development and growth, the pain may continue and occur in severe degree. Presumably the contractions of the uterus are increased by the presence of progesterone and are largely absent with estrogen alone. The hypoplastic or undeveloped uterus seems the more sensitive muscular organ for the reaction.

The *treatment* of these patients has consisted first in a careful examination, including a single-digit pelvic examination if the hymen will admit the finger; otherwise a rectal examination is done with an attempt to outline the uterus and adnexa. In addition, the washings from the vagina, in normal saline solution, are always examined under the microscope to determine the presence of normal estrogenic effect, the presence of pus cells indicating vaginitis or cervicitis, and the presence of motile Trichomonas or Monilia. These last findings have no connection with the dysmenorrhea, but are part of the gynecologic examination in the adolescent. After the examination, which is performed as gently and considerately as possible, a complete explanation of the findings is made to the child, usually in the presence of her mother. The mother may also be present during the examination, if desired. The normal findings are stressed, after which an explanation of the causation of the menstrual pain is presented, pointing out the relation of the development of the uterus, ovulation, progesterone, fertility and the attainment of womanhood. A further explanation includes the importance of anxiety and nervous tension, expectations and premonitory symptoms, the oversympathy of the mother and the resigned attitude that a horrible experience awaits the child each month. Finally it must be made clear that this pain will not interfere with her life or even be injurious.

As part of the treatment of functional dysmenorrhea in adolescent girls, not only are the details of the examination and the physiologic state explained to the patient, but also she is urged to pursue her normal activities and not allow the pain to interfere. She is advised particularly to exercise. Some years ago Robinson suggested the placing of 12 small objects, such as bobby pins, on the floor about the patient's feet. She was then to stretch forward with one hand, reach, bend, and twist her body to retrieve each object, which was then to be placed on the highest possible shelf that the patient could reach. The opposite hand was then used to retrieve the second pin and so on until all the pins or small objects were transferred. This exercise has been given to all these young women. How many of them pursue it is questionable. Goldlube, Lange, Mandrake and Brown[4] have used Moser's exercises (1914) and Billig's exercises (1943) in 5423 girls in Philadelphia. According to the questionnaire, both exercises gave the same results. Three fourths of the patients were cured or improved.

The Moser exercise consists of 4 steps: first the patient is in the hook-lying position, flat on her back with the knees flexed. With the soles of the feet flat on the floor and one hand on the abdomen, she breathes deeply ten times. In the standing position with hands on the back of a chair she raises and lowers her heels 20 times. In the same position she bends her knees deeply 5 times. Finally, in the hook-lying position she brings her knees as close to the chest as possible, then returns the feet back to the floor 10 consecutive times. The Billig exercises begin with the patient standing with one side 18 inches from the wall. With her forearm and hand against the wall she bends forward as strongly as possible, tilting the pelvis upward in front and down in back. The pelvis is moved obliquely forward toward the wall as far as possible, aided by pressing the hip with the opposite hand. The knees remain straight. This is performed 3 times on each side. In Goldlube's study there was no specific evidence of cure, but these methods do offer a simple approach to treatment.

Analgesics were used as necessary. The most frequently used one contains aspirin, phenacetin and dexedrine (Edrisal) with or without codeine, ¼ grain. Second, one may use a capsule, prepared with aspirin, 3 grains; phenacetin, 3 grains; atropine sulfate, $\frac{1}{150}$ grain; and codeine sulfate, ½ grain. This is quite effective. When nausea and vomiting are present, rectal suppositories of Dramamine, 100 mg., and occasionally thorazine, 50 mg., may be helpful. The use of hypodermic medication with Demerol, morphine and Pantopon is undesirable because of the strong tendency to addiction, especially with the use of Demerol. Alcohol is an excellent analgesic, but also has its disadvantages.

Mild sedatives are particularly valuable for nervous tension, especially in the premenstrual period. Often premenstrual tension is severe and causes the pain to be exaggerated. Butisol sodium, ¼ grain 3 times a day, or phenobarbital in similar dosage, may be helpful. The various tranquillizers often are advisable.

Thyroid extract may be important in all functional conditions in

gynecology and is to be considered in each patient who has severe dysmenorrhea. If the patient demonstrates lethargy, a dry skin, acne, low blood pressure and slow pulse, then certainly the basal metabolism or protein-bound iodine tests are indicated. If these results are low, administration of thyroid extract may be helpful. When the uterus is particularly hypoplastic and smaller than it should be for the age of the patient, and this is not infrequent, the administration of thyroid extract over a long period of time, for one, two or three years, may aid in the development of the uterus.

Interference with ovulation may provide a temporary respite from the pain of severe dysmenorrhea because ovulation is necessary for functional dysmenorrhea. Perhaps the progesterone formed by the corpus luteum is a direct cause of the severe spasms in the uterus. Interference with ovulation may be obtained by administering stilbestrol, 1 mg. for the first week after menstruation, 2 mg. the second week, then 3 mg. the third week, after which it is discontinued for this cycle. After a month or two or three, ovulation does break through and larger doses of estrogens may be necessary. If stilbestrol, in 5-mg. doses, is given daily for 18 or 20 days after cessation of the menses, ovulation is not expected to occur. All other estrogens may be used in similar dosage to give the same effect. Testosterone, if given early in the cycle, similarly will prevent ovulation. This may require testosterone propionate in a dosage of 25 to 50 mg. for two, three or four times shortly after menstruation. Recently the new product of norethynodrel with ethynylestradiol (Enovid) has been helpful in preventing ovulation. This product, which contains a particularly potent oral progestational compound and a strong estrogen, prevents ovulation completely when given in a dose of 10 mg. daily for 20 days following menstruation. Strangely enough, although the strong progestational effect is present, no menstrual discomfort follows during the withdrawal bleeding. This seems to indicate that the progestational hormone is not the cause of the severe cramping, but that this is related in some way to ovulation itself. Of course the compound in Enovid is not pure progesterone.

On rare occasion, dilatation of the cervix may give relief for a few months, and a second or third dilatation may be performed under unusual circumstances. Whether this is a matter of enlarging the canal for better drainage, or breaking the nerve fibers in the circular cervix, is unknown. The latter seems very possibly the answer. On rare occasion, with acute anteflexion, the stem pessary may be used, left in place for six weeks, then removed. In this series the stem pessary was used three times with improvement, at least temporarily.

It has seemed that the small size of the uterus was most important in explaining the dysmenorrhea associated with otherwise normal ovu-

latory cycles. Determination of the size of the uterus has been variable because this is dependent upon the palpatory findings of the examiner. Recently Odeblad and Bergstrand[7] of Sweden have described a method for determining the size of the uterus. They have particularly advised its use during adolescence. By producing a radioactive point from cobalt-60, which is attached to the index finger used on bimanual examination, a directional scintillation detector attached to the hand examining the uterus from the abdominal side records the gamma-counting rate at the position of the outer fingers. This method may be used in either rectal or vaginal examination. It is most interesting and may be applicable in clinical practice.

Although estrogens may logically be used in an attempt to increase the size of the uterus, and we have used large doses of estrogen at intervals in these patients, relatively little permanent effect is seen. More frequently estrone sulfate, 0.6 mg. daily between periods for 3 months, has seemed to produce a slight benefit, without interfering with normal cycles and ovulation. Now it seems that Enovid might be of some lasting benefit, if used in increasing dosage, of 10 mg. the first month, 20 mg. the second month, and 30 mg. the third month; this leads to a remarkable temporary increase in the size of the uterus such as occurs with pregnancy. Perhaps this may simulate the beneficial effects of actual pregnancy, which often cures dysmenorrhea. The use of the newer synthetic progesterones and estrogens has not been explored completely.

METRORRHAGIA

Metrorrhagia occurred in 24 patients in this group. The age spread was almost the same, from 13 to 17, as shown in Table 1. This indicates that anovulation, associated with nonsecretory endometrium or endometrial hyperplasia, may occur in the young girl and continue throughout adolescence. If the pelvic examination is normal for the age of the child, she is given progesterone, 50 mg. intramuscularly, and 2 days later this dose is repeated. No further progesterone is given for the next 28 days. Three days after the second injection of progesterone the bleeding becomes more profuse, as an unusually heavy menstrual period, and the endometrium is shed completely over a period of five or six days, after which the bleeding invariably ceases. Each 28 days, 2 injections of progesterone are given at 1-day intervals for a period of 4 months. By performing this medical curettage of Albright at these monthly intervals the bleeding is controlled. After four months the patient is allowed to travel on her own and often will revert to normal cycles. Sometimes there is recurrence of metrorrhagia, and the same procedure is repeated. Smaller dosages of progesterone may be used

in this method, and Holmstrom has advised that only one injection of 25 mg. be used. However, in our experience, the withdrawal bleeding is not so accurately predicted or performed with this small dose given on one occasion. Thyroid extract was used when indicated. Nervous tension was a most important factor, to be investigated in every case and treated with mild sedatives as necessary. Enovid is particularly valuable and will control the bleeding cyclically when given 10 mg. daily for 20 days, then omitted for 8 days and repeated in this cyclic manner for 3 or 4 months. Two patients in this group had curettage. One was of extraordinary interest, since she later proved to have a granulosa cell carcinoma of the ovary. This will be described later. Curettage is rarely indicated in young women since the Albright method of using progesterone has become available. Recently newer progestational compounds (as Provera, Upjohn) offer a much simpler method of controlling bleeding with very small dosages.

Nutrition is important. Obesity must be corrected. The most important factor in treatment—and metrorrhagia may be a severe problem on occasion—is that of controlling the bleeding temporarily until nature takes over and produces normal ovulatory cycles. One patient was treated almost constantly for some eight years with progesterone. When ovulatory cycles finally occurred, she became pregnant and had a normal child.

PELVIC PAIN

Pelvic pain was a complaint of 22 patients, and this was the reason they were brought for examination. Again the age spread was almost the same, except that 8 of the patients were seventeen. This intermenstrual pain was thought related to spastic colon and/or nervous tension. Treatment consisted in encouragement and the use of mild sedation such as butisol sodium and phenobarbital. One patient had an appendectomy performed, but the finding was a normal ruptured follicle. Another patient, age 14, was depressed with her pain and was sent to a psychiatrist. Another had a ptosis of one kidney, treated by a ptosis belt and encouragement. One girl, age 15, had a dilatation and curettage with some improvement. Not only was there intermenstrual pain, but also dysmenorrhea in this case. On the whole, these patients represented functional pain as far as could be determined.

OLIGOMENORRHEA

Oligomenorrhea was complained of by 18 patients. Their ages ranged from 14 to 17, the largest number, 8, occurring in the seventeenth year. These patients menstruated at intervals of six weeks to four

months. Nervous tension and lowered metabolism were thought to be the most important causes. Twelve of the 18 patients were treated with thyroid extract, and most of them improved or became normal. Very small doses of estrogen, as Premarin, 0.3 mg., were given to several. Experimentally, this small dose of estrogen has been thought to stimulate the hypothalamus and pituitary glands. No definite effect could be determined. One patient had slight hirsutism and elevation of 17-ketosteroids to 17 mg. per 100 ml. If this finding was confirmed, she was to be given cortisone.

DISCHARGE

Discharge was the prime complaint in 13 of the 200 patients—not that a large number of the others did not have some discharge. The 13 whose chief complaint was discharge had an age range from 14 to seventeen. An equal number occurred at 16 and before as occurred at seventeen. The cause of the discharge in these cases was *Trichomonas vaginalis* in four cases, *Monilia albicans* in three cases, and chronic cervicitis in six cases. This incidence is in great contrast to the many prepubescent children seen by the gynecologist whose complaint is almost invariably discharge and irritation. That complaint in that period of life is related so completely to the thinness of the vagina, its alkalinity, and lack of glycogen, that the prepubescent vaginitis is cured by the onset of adolescence and the effects of the estrogenic hormones. The four who had *Trichomonas vaginalis* were 14 and 15 and (2) 17 years old. The one 15- and the two 17-year old patients admitted sexual relations. The one 14 years old did not admit this, but it did appear possible from the examination. The question as to whether trichomonas infection of the vagina is always transmitted by sexual relations remains a moot one, although the evidence is strong in the majority of patients. Undoubtedly in some, as in the rare case of the young child, infection must occur without sexual contact. In 3 of the cases the patients were treated with acetarsone (Devagan) inserted into the vagina each night for 90 nights. One was treated with Negatan with improvement, but no cure on the last examination. This was a number of years ago. Three patients had monilial infections, one of which was persistent and recurred. Diabetes was not present. They were treated in each instance with phenolmercuric acetate (Nylmerate jelly) with satisfactory results. In six patients the discharge was due, not to the vaginitis, but to a cervicitis. In each instance the cervix was cauterized with radial strokes of a nasal-tipped electric cautery, with cure of the discharge. Others have pointed out that nonspecific vaginitis and foreign bodies are causes of discharge in the adolescent group. We have not found this to be true, although both are present in the prepubescent patients.

It is of interest in this series of patients that 82 of 108 who had visual examination of the cervix by speculum showed degrees of eversion and eversive cervicitis. This was classified as slight in 42 of the 108 cases, moderate in 29, and marked in eleven. In 26 patients in whom the cervix was visualized there was no eversion of the cervix, and it appeared perfectly normal. Thus 76 per cent of the 108 who had the cervix examined by vision showed eversion or eversive cervicitis, while 24 per cent appeared normal. Not all patients with eversion of the cervix had developed inflammation, but certainly the vast majority had, as indicated by the shedding of pus cells into the vaginal secretions. A washing of the vagina was taken in every instance in every patient, and the number of pus cells noted. In the remainder of these cases the cervix was not visualized because of the small orifice of the hymen, although secretions were taken for examination. In these patients the pelvic examination was completed by the rectal approach.

SECONDARY AMENORRHEA

Secondary amenorrhea was the prime difficulty in 10 of these patients. The term "secondary amenorrhea" means that the patients have menstruated previously, but not for six months or longer. This age group ranged from 13 through 17 years. The ones who were not menstruating when seen at 13 or 14 years of age had started at ages 10 or 11 and had stopped a year or more later. This was never considered a serious matter in these young children, and two of these were only observed. One patient showed an absent vagina and uterus. An artificial vagina was constructed, and the patient became married at age 17 with satisfactory results. Five patients were given basal metabolism tests and thyroid extract; three of the five later menstruated normally.

One patient, age 15, was of particular interest. Although the secondary amenorrhea was the presenting complaint, this was actually almost the least of her problems. This patient was tall and somewhat obese, had tapering fingers and had been treated for diabetes for several years. In addition to her secondary amenorrhea and apparent glandular dysfunction for which she was referred to the gynecologist, she had been having blackout spells. Under observation these became much worse, and she was unconscious for several hours at a time. The blood sugar determinations were low during these periods of unconsciousness. After one of these severe episodes the patient admitted taking a much larger amount of insulin than prescribed in order to gain attention and try to draw her estranged parents together. Finally she gave herself such a large dose of insulin that she could not be returned to consciousness. Although she lived some 10 days longer, she then died. Although every effort had been made to reach her psychologically, and it was thought that the situation was under control, the patient had returned to this method of obtaining sympathy and attention.

One other patient with diabetes was underweight, and it was thought that the secondary amenorrhea was related to this disease. Two others have not menstruated in spite of repeated treatment with progesterone,

stilbestrol, and the like. It is felt that these patients may have permanent secondary amenorrhea.

DELAYED MENSES

Delayed menses were complained of by the parents of five patients. These children ranged from 13 to 16 years in age. Certainly in the 13- and 14-year-old age group one would not be concerned with the delay, and examination and reassurance were the only treatment indicated. In each instance there was development of the secondary sex characteristics. The vagina was thickened, and the vaginal washings showed a strong estrogen effect. Watchful waiting was utilized.

PREGNANCY

Pregnancy occurred in six patients in this group. Four were 15 years of age, and 2 were sixteen. All were unmarried, and these were unwanted and accidental pregnancies. Five of the six became married and delivered of their children. One patient had a criminal abortion, developed fever and was moderately ill, but did recover after intensive antibiotic therapy.

SALPINGITIS

Four patients in this adolescent group had salpingitis, presumably, though not proved, due to the Gonococcus. They were 16 and 17 years of age, and all had had sex relations. This incidence of only 2 per cent salpingitis is certainly lower than the 20 per cent incidence of gonorrhea mentioned by Gelperin[8] in the adolescent between 15 and 19 years of age. He thought that promiscuity was extremely frequent. In our experience in these 200 young women, promiscuity is not frequent and the gonococcal infection apparently is rare.

MENORRHAGIA

Menorrhagia was a complaint in four patients. In contrast to metrorrhagia, these patients have prolonged, profuse, but regular menstruation. They were treated with mild sedation and thyroid extract, when indicated, with improvement.

PRIMARY AMENORRHEA

Four patients had primary amenorrhea. Their ages were fifteen, sixteen and seventeen years. This is somewhat early to determine a diagnosis of primary amenorrhea, because patients may not have their first

menstruation until 18 or 19 years, though this is rare. Certainly the absence of menstruation at the age of 15 is not of great concern, nor at sixteen. Each of these four patients was of short stature, tended to have a web neck, and had atrophic vaginal smears. Two of these patients demonstrated male chromosomal patterns. Three have been followed up for several years with substitution therapy, producing artificial menstruation by giving estrone sulfate, 1.25 mg. daily for 20 days, with an injection of Cyclogestrin aqueous (Upjohn) on the twentieth day. This combination of estrogen and progesterone has been followed four or five days later by an apparently normal menstrual period. Immediately after the bleeding the estrogen was started for the next cycle. These patients have developed to a remarkable degree, and have normal breasts, normal pubic hair and a normal-appearing vagina, but a small uterus. Two have subsequently married and appear to be happy in their sex life. They intend to adopt children. In several other patients with primary amenorrhea, diagnosed after the age of 17, similar excellent results have followed the use of substitution therapy. These patients were informed that they will never menstruate normally and that they will remain sterile, but that their sex life should be normal.

ABDOMINAL PAIN

Three patients seen because of abdominal pain proved to have acute appendicitis.

OBESITY

Obesity was the prime complaint in 3 patients, all of whom were 14 years of age. Two had an excellent result with weight loss from diet alone, because they wanted to lose weight. One was unimproved.

EPILEPSY

Epilepsy was diagnosed in four patients. These children had their seizures at the time of their menstrual periods. Each was seen by a neurologist and treated appropriately.

HIRSUTISM

Two patients, 14 and 15 years of age, had a primary complaint of hirsutism. In one this was relatively slight, but in the other the hair was thick in amount and a beard was present. The 17-ketosteroids were normal in the latter case. This patient has menstruated normally and has normal pelvic findings.

ADRENOGENITAL SYNDROME

The adrenogenital syndrome was diagnosed in one patient, aged sixteen. Apparently this was of the acquired type, developing a few years before this age.

The patient was small of stature, and had rather heavy facial features, a rather heavy growth of hair on the face and over the body, a muscular physique, enlargement of the clitoris, atrophic vaginal smear and atrophic uterus. In 1950 this patient was operated on, and one large hyperplastic adrenal was removed. The other appeared much smaller and was not removed. The 17-ketosteroids dropped from 100 to 30 mg. in 24 hours. In the next few months there was a return of the same high level of 17-ketosteroids. Shortly after this she was started on cortisone therapy, following the suggestion of Wilkins, who saw this patient in consultation. Since then she has developed remarkably well. Her 17-ketosteroid excretion remains at 3 or 4 mg. per 24 hours, her menstruation is normal, and the hair is much improved. She has married and is quite happy. Recently she was reoperated on for removal of a tubo-ovarian inflammatory cyst. A biopsy from the opposite ovary showed follicular activity. No corpora lutea or corpora albicantia could be seen in either ovary. Apparently she was having anovulatory menstruation. This patient had better results with the intramuscular injection of 75 mg. of hydrocortisone, given every third day, than with oral therapy, which was less effective in reducing the 17-ketosteroids.

OVARIAN TUMOR

Ovarian tumors were diagnosed in two patients. One was operated on and had a granulosa cell carcinoma. She had been treated for a long time for functional uterine bleeding. Two curettages showed endometrial hyperplasia. A second patient, age 17 years, had a tumor mass to the side of the uterus. She went elsewhere for surgical treatment.

BREAST LESIONS

A breast tumor of the intracannicular type was excised from each breast in one patient, 15 years of age. Papillomas of the nipple were excised, under local anesthesia, from two patients. A slight bloody discharge from the nipple was complained of by one patient, aged fourteen. Apparently this disappeared without treatment. One patient complained of unilateral hypertrophy of the breast. One had bilateral virginal hypertrophy. One complained of mastalgia at age 16, and was urged to use proper brassiere support. One girl complained of striae on her breasts which had developed from her rapid weight gain.

RARE CONDITIONS

The remainder of the patients had rare conditions. A nontoxic colloid goiter and mental retardation were found in one patient 15 years old. Nervousness was the only complaint in one patient, exhaustion in another. Three had vulvitis, two due to trauma and one related to dia-

betes. Alopecia areata was the finding in one, nausea the only complaint in another, apparently due to nervous tension. One patient complained of severe back pain and had the findings of a ruptured intervertebral disk. She was seen by a number of excellent orthopedic neurosurgeons who wished to delay surgery because of her youth. Finally, excision was performed, followed by a complete cure.

Congenital absence of the vagina was found in two patients. One had a uterus didelphys, one a bicornuate uterus. A bleeding hymen was found in one, following trauma from attempted sex relations at age fourteen. One patient, aged 15, who was newly married, presented herself to obtain a diaphragm, and one patient, aged 16, who was married, had an acute Bartholin gland abscess.

SUMMARY AND CONCLUSIONS

1. Two hundred adolescent girls have presented themselves for gynecologic examination and treatment.

2. Dysmenorrhea was the prime complaint in 55 (27.5 per cent). A normal hypoplasia of the uterus was the common finding. Treatment consisted in explanation of the findings on examination, the physiologic changes that are normal, the urging of physical exercise at the time of menstruation, and a consideration of the relation of anxiety and nervous tension. Sedation was used as necessary, attempting not to interfere with normal activities. Thyroid extract was thought of value in the normal development of the uterus. The interference with ovulation gave a respite and temporary improvement. The newer progesterones and estrogens may give more rapid results by producing the growth of mild pseudopregnancy.

3. Metrorrhagia (puberty bleeding) occurred in 24 patients (12 per cent). They were best treated by progesterone-withdrawal at cyclic intervals until spontaneous ovulation occurred. Thyroid extract was thought to be important in certain cases.

4. Pelvic pain was the chief complaint in 22 cases (11 per cent), for the most part considered functional.

5. Oligomenorrhea occurred in 18 patients (9 per cent). Nervous tension and lowered metabolism were thought to be the most important causes.

6. Discharge was the prime complaint in 13, caused by Trichomonas in 4, Monilia in 3, and chronic cervicitis in six. Eversion and chronic eversive cervicitis were present in 76 per cent.

7. Secondary amenorrhea occurred in 10 cases and was treated by sedation and thyroid extract. Induced menstruation was used at intervals.

8. Delayed menses was the complaint in five.

9. Pregnancy occurred in six, and salpingitis occurred in five.

10. Menorrhagia was a complaint in four.

11. Primary amenorrhea occurred in four, treated by substitution therapy.

12. Abdominal pain due to nervous tension occurred in three, obesity in three, epilepsy in four, hirsutism in two, the adrenogenital syndrome in one.

13. Ovarian tumors were diagnosed in two, a breast tumor in one, and various breast complaints in six others.

14. Congenital absence of the vagina occurred in two, uterus didelphys in one.

15. The remainder had rare isolated conditions.

It is evident that gynecology is of distinct importance in adolescence and that many complaints interfere with the growth, development, and present and future health of these young women. Careful, thorough and gentle gynecologic examination does reveal many diseases that may be readily corrected. Undoubtedly the psychologic effect of this approach must aid the young woman to understand her position in human biology and in relation to her future family.

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DISCUSSION

DR. HEALD. There are a couple of things I thought I would comment on in relation to Dr. Gray's paper. One thing that we are particularly aware of at the Adolescent Clinic in Boston is the question of whether you do a pelvic examination on these kids. Our particular feeling about it, and this also represents the opinion of Dr. Sturgis, who is our consultant in gynecology, is that in the younger adolescent it is best that a pelvic examination not be done.

First, from the viewpoint of purely inadequate examination. If you have a young, 12- or 13-year-old girl, it is difficult, it seems to us, to get enough relaxation to do an adequate pelvic examination.

Second, and it seems to us most important, psychologically these girls do not tolerate this procedure well. This is a time when they are tremendously concerned about sex and about their own maturation. We do feel there are certain instances when pelvic examination in the younger adolescent should be done, and this is then done, with proper explanation, under anesthesia. This can be done on an outpatient basis with sodium pentothal. There are those who differ and feel that maybe the anxiety about pelvic examination resides in the physician and not in the patient. But there have been children in our hospital and among those who have been referred to us in whom this has been an upsetting procedure. So we feel that girls should be evaluated individually as to whether you do a pelvic examination or not.

It might be well at this point to mention that *adolescence* is a broad term. What may be improper for a girl early in adolescence may be perfectly appropriate later on.

I would like to mention our experience over a five-year period with various gynecologic disorders in a general medical clinic. Specifically I am referring to those patients between the ages of 12 and 21 who required the opinion of a gynecologist. This does not really represent absolute incidence of menstrual disorders in our clinic, because there are some who may not see the gynecologist. In reaction to menstruation, which is a fancy term for dysmenorrhea, but implies our feeling as to its genesis, this figure represents only a small part of the total number seen in our general clinic.

A good many of our physicians now have had sufficient experience that they handle this themselves. If they need help, they may talk to our gynecologic consultant, or may actually have the patients see him.

In this series of 136 girls over a 5-year period, who actually saw our gynecologist, 20 patients had abnormal vaginal bleeding. Basically, this is a disorder which we see early in adolescence, and is primarily acyclic, anovulatory bleeding. Amenorrhea (two patients) is broken down according to primary and secondary causation. Most of the

primary patients represented ovarian dysgenesis. Recurrent abdominal pain, which the physician in our unit felt might well be related to the genital tract, was found in some 18 girls. Six of them eventually required surgery. Vaginal discharge was a primary complaint in 17 patients. These were primarily physiologic discharges which the physician was uncertain about. It was interesting, in our experience, that physiologic discharges were rarely accompanied by associated local vaginal symptoms. If there are associated local symptoms, we usually find a specific organism, such as Trichomonas or a bacterium.

Defect in timing, as oligomenorrhea or polymenorrhea, accounted for some 12 patients.

DR. JOHNSTON. I would definitely not endorse a vaginal examination as routine for an adolescent unless an experienced physician found it impossible to learn what was needed by a rectal examination. Actually, my interest in the possible role of the pediatrician in the menstrual difficulties of the adolescent derives from a call I had from one of the doctor's wives. I had seen her daughter until she was about fourteen. Now, at 16, there was a complaint of dysmenorrhea. She had gone to an internist, who had referred her to a gynecologist, who did a vaginal examination. She now bitterly resented the whole medical profession. She did agree, however, that she would come over and have a talk with me, provided there was no examination. Just from the history, I think it could be reasonably inferred that her problem had a purely functional basis. Menstruation was perfectly normal in the summer months when she led a vigorous out-of-door life. During the school year her day was heavy with scholastic and extracurricular activities, resulting in failure to take an adequate diet, get enough sleep or even take time for a regular bowel movement. With a little rearrangement of schedule the menstrual problem disappeared. Incidentally, a physician who cares for the freshmen at a large university tells me that she expects all freshmen to cease to menstruate until after mid-terms.

As to the role of exercise, Ewing reports an interesting study on a group in New York. Half of those complaining of dysmenorrhea rested for the duration of the painful period; another half took part in a vigorous program of athletics, including basketball and hot and cold showers. In the latter group the problem disappeared in half the time.

I would agree that any abnormality in thyroid function would usually be incompatible with a normal menstrual cycle. Particularly common in our series was the association of prolonged flow with hypothyroidism.

Nutritional abnormalities, whether in the direction of undernutrition or obesity, show a frank relationship to menstrual irregularities.

Both states can have a psychogenic basis, and this in turn is notoriously related to menses.

This all adds up to emphasizing the point that a consideration of menstruation involves looking at the girl as a whole, remembering that the physiologic process of menstruation cannot be dissociated from any other abnormality of psyche or soma. On the purely organic side, in a hospital practice we found 10 per cent organic lesions—much higher than would occur in ordinary office practice—and accordingly we would urge that the help of the gynecologist be sought after a reasonable exploration of the commoner factors.

DR. GARDINER. Dr. Gardner, I would like to say that Dr. Gray's experience has been similar to ours here at the Indiana University Medical Center, particularly in our private practice.

I think it is important that there be just as much specialization in adolescent gynecology as there is specialization by the pediatrician or internist who is interested in this age group. The average gynecologist does not see many of the adolescent gynecologic problems, but usually in every town there are one or two men who are particularly interested in this area.

I have talked with a number of pediatricians on this subject on repeated occasions and have had a chance to see a number of these problems. Each one, to me, is a law unto itself, and each mother who comes with the girl is also a law unto herself. Each must be handled accordingly.

Whether one does a pelvic examination or not I think is a matter of judgment. I do not think I have ever known of a pelvic or rectal examination that has been a traumatic experience to the individual, because we may have seen the young girl on two or three different visits before we complete the pelvic examination. There are some in whom it is necessary, and some in whom it is not necessary.

One of our major problems, of course, has been the problem of the premature onset of menstruation and whether or not this is associated with organic disease. Then, again, we have those groups of individuals who have delayed onset of menstruation. That, also, is a problem from the point of view of the family. We have found that many of these problems which we see in adolescent gynecology are functional, frequently due to misinformation on the part of the mother or the youngster. I spend much of my time, in treating adolescent gynecologic problems, talking with the young patient and her mother and attempting to provide them with a proper knowledge of the physiologic events which are taking place.

One more comment, and that is about thyroid. I think that with any drug about which we are enthusiastic, we are going to get pretty good

results because most of the girls actually have a functional problem that will disappear in time. Recently Dr. Edwin Astwood of Boston expressed a strong feeling that our homeopathic doses of ½ to ¼ grain of thyroid probably are not very effective. Recently 2 girls with secondary amenorrhea were placed on 3 grains of thyroid a day, which they seemed to tolerate. In two months the periods returned to normal.

I think it is difficult to eliminate one's enthusiasm for a drug and evaluate its true therapeutic effect in the young girls in whom, in most instances, the menstrual periods will straighten out by themselves as time, and good tincture of time, is allowed to prevail.

DR. GARDNER. I would like to add one comment also, at this time, concerning the description of what will hereafter be known as the Louisville epidemic of hypothyroidism.

I think we really ought to differentiate carefully between the empiric use of thyroid and its use in authenticated hypothyroidism. At present, with our present biochemical knowledge, we must define a level of circulating thyroid hormone that is low or detect the presence of thyroid metabolites that are physiologically inactive to authenticate a diagnosis of hypothyroidism. If we do not do that, I think we should not use the term "hypothyroidism."

DR. SHAW. Dr. Gardner, perhaps I will talk off the point a little. Dr. Gray talked off the point a little bit, and very delightfully. There is only one thing I want to emphasize, and that is the importance of the careful examination of the young child. This is not adolescent gynecology, for the little girl does not object any more to examination of her genitalia than of her throat. Many things may be detected in the preadolescent period that can prevent trouble later on.

I have some old textbooks, and I have been interested that in the early 1800's a matter of great interest was imperforate hymen. This must have been more common in the latter part of the nineteenth century, for I have seen only one case since I have been in practice, in an older child. But I have seen the adrenogenital syndrome unrecognized at newborn examination and mistaken for simple neonatal hypertrophy. I have repeatedly seen synechia vulvae which certainly did cause trouble. I shall never forget the mother who came to me having been told that her poor little girl had no sex at all and had no evidence of genitalia. Gentle use of a probe demonstrated normal structures when dense adhesions had been separated. This is a common thing. I have seen it pass unnoted by numerous physicians.

About the empiric use of thyroid. I think this is an honest source of debate, and I know what the endocrinologists will say, but the clinician dies hard. I wonder if there isn't a use for thyroid which is

not replacement therapy. I think there is. Sometimes one sees surprising results from homeopathic doses which surely do no harm.

DR. TYLER. Frequently, when we are talking about physiologic symptomatology, the distinction between nervous and psychogenic is brought out. I thought of this as a primarily semantic difficulty, but I felt Dr. Gray was implying there is etiologic difficulty. Would you comment on that, Dr. Gray?

DR. GRAY. In our discussion with patients we speak of functional changes caused by nervousness, nervous tension, worry and anxiety states. This the patient and the gynecologist can understand. The term "psychogenic" is vague and mysterious for the patient and the practicing physician. Evidently some psychogenic causes of menstrual disorders are very occult.

I did not mean to press this point of thyroid therapy, although it has proved a main interest in the discussion. It is often empiric treatment and not too scientific. When I left the Hopkins Hospital 20 years ago, I was convinced that thyroid therapy was of no value in gynecology. My teachers indicated that. After 20 years' experience in the central part of the country my opinions have changed. Many patients with functional menstrual disorders and with subclinical hypothyroidism are aided by treatment with thyroid extract.

One of our great difficulties is the determination of subclinical hypothyroidism in the laboratory. Dr. Gardner, can the amount of thyroid secretion into the blood stream be determined as triiodothyronine in a practical manner today?

DR. GARDNER. Triiodothyronine is hard to determine. What I suggested that we measure is protein-bound iodine and/or butanol-extractable iodine. This is a useful pair of determinations in the diagnosis of hypothyroidism.

DR. GRAY. Our clinical opinions derive from our personal experience with patients. Only a few cases may determine this.

We recently saw a very attractive girl, some 25 years of age, who had secondary amenorrhea. She had not menstruated for 9 months. Pelvic examination was normal. The vaginal smear indicated a normal estrogenic activity. This girl's blood pressure was 100/60. Her skin was slightly dry. She said she had little energy. She was not obese. The basal metabolic rate on the Jone's machine was —18. She was given Armour's Thyroid, 1 grain daily for a month. At the end of that time the pulse had not changed. The thyroid extract was increased to 2 grains daily. At the end of the second month she menstruated. For the next 6 months she had 6 normal menses.

The internists who saw this girl said, "This is ridiculous; you don't need the thyroid. Stop it." After 3 or 4 months protein-bound iodine determinations were normal. Maybe it takes longer than that for the iodine to disappear. For 6 months she took

no thyroid extract and had no menstruation. Then the patient returned to the gynecologist. Thyroid extract was resumed, and immediately the menses occurred regularly.

Almost exactly this chain of events has occurred in other cases. This causes us to believe that the determination of protein-bound iodine is of no value for subclinical hypothyroidism and that we must rely mainly on the basal metabolic rate and clinical findings in the treatment of menstrual disturbances.

DR. SOLNIT. As Dr. Sprague Gardiner said earlier, the enthusiasm with which a physician administers a particular treatment, whether it be exercise or a particular medicine, is extremely important. One could expect that the emotional states of adolescent girls have played an extremely important role in the response to the treatments that have been discussed. If we tell a teen-age girl with dysmenorrhea to go home and go to bed, the advice may be understood by her to mean she is helpless.

PSYCHOLOGY OF ADOLESCENCE

RALPH RABINOVITCH, M.D.

I certainly do not want to give a group like this a didactic talk on the psychology of adolescence. I would prefer to raise some of the issues, some of the concerns we have, as we think of the psychology of this period, more to raise questions for your discussion than to try to do a broad, general review which could not possibly be done in this short time.

I think there has been a tendency, in discussing the psychology of childhood, and probably most especially in relation to adolescence, to overgeneralize and to oversimplify. Also, there has been a bad tendency to describe adolescence in terms of negatives, with negatives alone, with minimal stress on the wide range of personality, of behavior and of problems in our teenagers.

It is difficult, I think, to define the over-all or general psychology of adolescence. Certainly, if you were asked to describe the psychology of adulthood, that would be difficult. The older the child, of course, the more fluid, the more variables there are in his total reactions and in the causative factors in his adjustment. And, also, the older the child, the more the total environment influences him, and the more difficult it is, in fact, to generalize. When we talk of the psychologic needs of infants, we do not have too much trouble. We know they need gratification through mothering to establish a one-to-one relationship.

When you begin to talk in simple terms of adolescence, of course, you simply do not make sense. There are certain generalizations everybody knows about the psychology of adolescence. Everybody knows it is a period of tension caused by endocrine changes. We have certainly heard about that. Everybody knows that it is a period in which there are strivings towards independence and, also, dependency needs which make these kids difficult to handle by parents and teachers.

We know, too, there is a conformity need in the adolescent years. We know there is a tendency for them to be sort of noncommunicative, especially with parents, about their personal life. We hear a lot about adolescence being a period of resurgence of old, unresolved conflicts. This often gets very general and not too clear,.

All these things are true, of course. Seeing that we all recognize them clearly under the psychology of adolescence, I am not going to mention them any more. It is important, though, to recognize that all these problems that I have mentioned do not, of necessity, lead to disturbed behavior, nor are they particularly pathological.

It is as true that an adolescent has strivings toward independence as it is true to say that an adult, in a new marriage, has a need to establish a meaningful and successful relationship with a wife. This does not in itself, except in 99 per cent of marriages, lead to significant troubles.

That adolescents have conformity needs we know, but this does not have to lead to difficulties. Sometimes what we have done, I think especially in relation to teenagers, is to describe their normal psychology and then cry jeremiads because we interpret normal to be pathological.

Now, the one thing I think we can most certainly say about the psychology of adolescence is that it can never be understood in relation to the individual child without reference to his previous adjustment. One can never understand the difficulties that many of our teenagers have without some reference to their previous experiences. When we talk of the adolescent and psychology, we have to ask: What is there in the personality that should have evolved in a comfortable, sustaining way in each child by the time he enters this period, with its new problems? If there is one contribution of modern psychology, it is that this developmental kind of sequence has to be understood.

In the first year the chief difference, psychologically, between a newborn infant and an infant one year of age is that the one-year-old is relating with the mother in a meaningful, warm, giving kind of way. There is a mutual responsiveness. There is the child who has been denied good mothering, which is achieved through one-to-one mothering: that is, the physiologic gratification of feeding and comforting and warming, and all the other needs, through which the child recognizes the mother and responds.

I honestly think that many of the severest problems we have in these adolescent years today, especially with the delinquents, go way back to the first two or three years. These are some of the children who have been denied the opportunity for this kind of depth-relationship development. So they are rather empty and callous by the time they reach adolescence.

In one to three years of age what happens? Between the years one to three, a child develops spontaneity and personality and, also, beginning response to controls. He begins to learn that there are limits and, also, that he can enjoy his own, you might say, reaching out to life. Joy in living is probably the best term for a two and one-half year old, wonderfully mothered, beginning to talk. The child who has the opportunity at this time for freedom and some stimulation plus the beginning of reasonable controls within the home, evolves to the age of three with spontaneity, warm feelings and the capacity to relate deeply and empathically.

From three to six you have a sexual identity developing. I have no doubt in my own mind, and I could not be a psychiatrist and not stress this, that some of the girls who come at age 13 much concerned and overanxious about menstruation, dysmenorrhea and other gynecologic complaints, may have had the roots of their problem begin here.

It seems incredible that a fair number of girls would not have fear of this sexual development, because they themselves have not, in the formative sexual identity years, evolved a comfortable feeling about themselves as girls. The same, of course, applies to boys.

This achievement of sexual identity is accompanied by a kind of feeling for integrity of family which I think is equally important and cannot be separated from the other. It is not just a sexual kind of thing, but children do develop, as you know, their fantasy of marriage, their feelings about what family life will be for them, their motivation, in fact, toward marriage, in these very early years, in a childish, obviously immature way.

Now we reach 6 to 12. I do not think they are the latency years; I think that is a terrible term. Irene Josselyn says that is one of the great psychiatric euphemisms. I looked up "euphemism," and it is the right word. These are not latency years; they are years in which energy is directed away from some of the genital interests into play and study and some other things. A child develops, at this point, a feeling of competence, a feeling of success, the kind of feeling that measures up and means something to others through, obviously, the kind of personal experience at home and school that leads, you might say, to sustaining ego attitude. I think this is important.

Now we are where we should be, at adolescence. Obviously, to discuss the psychology of adolescence, which many people do today, without reference to the other factors is to miss the boat terribly and, honestly, to do a great disservice to the teenagers we are trying to understand, both from the social point of view and in individual work with them.

It would seem logical that a good many of our more aggressive teenagers have not achieved a sense of competence through the ele-

mentary school years and reach the age of 13 or so feeling terribly in need to prove themselves further. We can simply state that many of these kids who are acting out are trying to find in their own deviant way a sense of competency and of worth through being bullies or through delinquency or undue acting out.

First of all, I think these kids have a terrible need for clarity about their *role in the family*. This is fundamental. It is difficult today, however, for some people psychologically to give our teenagers a sense of place in the family.

There are many problems today for our young people in relation to family living. I will just mention one or two briefly. Some of us are much concerned about what is happening to kids in the suburbs. Just to give you an example of the type of thing that worries us, if you think of the psychology of the suburb, even the psychology of America today, it is very, very much a future-oriented motivation. Parents move out to the suburbs with the idea they are going to do something for their children; they will give them a good preparation for later social competency, and they will build for their educational future. They will move from a two-level to a tri-level and five-level home; as the neighborhood gets slightly polluted, they will move to another neighborhood, and they will keep going.

These kids really want something *now*; they are not worried about these future things, and they do not want the four-level home or the college fund, in fact. They want their parents here and now, and they want to be part of the family and have a place now. The more parents have their eye on the future, developing security for their children, which I think is a sort of suburban syndrome, I think sometimes the more kids feel left out. This is an extremely important question, I think.

We always talk of adolescents' *sexual role*, and they must have clarity here, obviously, not only in terms of their identity or their personal identification as a boy or girl, but also in terms of a sexual role behavior. They have to know what the community will allow, what is appropriate behavior. It is my absolute conviction, dealing with them every day, that they are not capable of making their own decisions in these important matters.

Most kids under the age of 17, with many people so concerned about their independence, have in these matters been let down by having received little in the way of real direction. It is rather like when a child says to the mother, "How far should I go at the age of 15?" and the mother says, "What do you think, dear?" At that point the battle is lost. Then they go to the gynecologist.

There are other factors, though, that are important, I think, in terms of sexual identity and role. Irene Josselyn is a woman for whom we all have great respect. She has done wonderful work in psychologic prob-

lems of children with rheumatic fever, extremely interesting work with asthmatic children. She has recently actually written that motherliness has become a repressed instinct in America, which is going awfully far, I think, but out of her own experience with many mothers and kids she makes that statement. Also she says that one of the great problems, in terms of family or sexual identity for boys, is a failure to recognize the tenderness in men and to make tenderness, even strong fatherly feeling in young fathers, something to be frowned upon and treated as a weakness.

The third area that needs a great deal of clarity is in terms of their *role in school.* This is extremely important. Today there is much trouble here. As you know, our schools have gone to pot; teachers are pinheads and onionheads and everything else. Everybody is an expert on schools. I should not even be mentioning it. I have only worked as consultant for some 15 years with a school system. I am neither an admiral nor a general, and I should not say a word, I know, but it is true that our schools are being terribly undermined by many, many people who, I think, have not stepped inside a school for 20 years. There is a kind of pressure being brought to bear toward a conformity, and a failure to recognize something that is vital. I just want to mention this briefly.

The big criticism is that some persons called "the life adjustment boys" have ruined the schools. It has really always been my thought, as a physician, that life adjustment was not a bad thing to attain, if you could. Now, all these life adjustment people are ruining the schools. This would be true if it were not also true that a high percentage of our children come to school unprepared for real, devoted work.

A high percentage of kids in our high schools, especially, have enough immaturity stemming from difficulties in their previous experiences, or their current life, to present problems in the school. If they all came adjusting easily, if they were ready to step in immediately and be devoted students, relating comfortably, then no one would have to worry about life adjustment.

What do you do when they don't? What happens to the thousands of children who come to school bringing their problems with them? This seems to me extremely important for pediatrics and psychiatry, particularly because, if I may say this, I do not think we have given leadership in relation to these things sufficiently at a time of real crisis in our schools.

There is one other problem I know Dr. Senn will be discussing tomorrow, and that is the high prevalence of underachievement among teenagers. It is hard to know why, and there are probably many reasons, but certainly there are a great many of our teenagers who do not have the kind of motivation of an intrinsic type to carry them through to success. This concerns us greatly.

I think they also need some clarity about their *job future*, which is terribly important and, in fact, urgent today. This is a real problem in an area like ours in Detroit, where there are almost no jobs opening for young kids who leave school at 17 or 18 and where there is great anxiety about failing to find a place.

There has been much talk about science, as you know; it is very wise, I am sure, but I do wish that the one science they weren't the most hysterical about was the science of total world destruction—that is, to get bigger bombs and faster—and would give a little more thought to the more positive sciences. It is true there is a great deal of hysteria about science training, with a lot of failure to recognize that a large majority of our children are beginning to worry in relation to where they will fit in an age in which automation is cutting down jobs for the less capable.

I think it is important in terms of psychologic need to recognize that we do not want to have our children, our teenagers, adolescents, overcommit themselves to a job future too early. There is too much in the ninth grade of "What are you going to be? What are you going to do? Prepare yourselves!" This is far too abstract for some of the smaller children, at least the early adolescents. I think they need a little time even to experiment sometimes after they get out of high school, because the pressure to decide terribly early, I think, is too great an anxiety-provoking factor for some.

Adolescents cannot establish their own *value* scales. Period! This, of course, is impossible. When we talk of the psychology of adolescence, we talk of responsibility and that kind of thing, devotion to work and duty and all this business. The value systems of teenagers, their standards, the solution, in fact, of much of their delinquency, will be found in the adult world and not in their world. This is important. They are looking for much more leadership in this area than they are getting. I personally am greatly concerned. Today, when you can honestly say that expediency is more valued than integrity, and when I think the headlines are more gruesome than half the comic books, you cannot but expect to have a great deal of trouble and delinquent teenagers. This business of values and standards and morals must be communicated to our teenagers, and this comes from adults, and is a tremendous challenge, in fact, if I may suggest, to America as a whole today.

We have had little in the way of true research into the processes of adolescence. There has been too much overgeneralization and resort to clichés.

Many of you know Piaget has for some 25 years now, in Switzerland, been working in a peculiar, laborious but nonetheless interesting way on the development of logic, of the thought processes in children. He and his associate, Dr. Inhelder, have just this year published their book

on logical thinking through adolescence. The book is terribly difficult to read, by the way, but fortunately the last chapter is a cogent summary, so that you do not have to understand anything; all you have to do is understand the last chapter, which is helpful. They define four or five things I would like to leave with you for discussion.

First of all, they comment that the thing that most distinguishes the adolescent from a younger child is that the adolescent is, of necessity, "committed to possibilities." It is not so much real-life systems they are interested in, but theories; they are very much concerned about a life program for themselves, and they constantly, in their introspective moments, which are many, are toying in their minds with possibilities and alternatives.

I am going to add just one or two notes of my own, after each of these. I think this one is extremely important in thinking of teenagers because when they are so preoccupied with possibilities, it is our job to give them good ones to choose from. This is essential.

The second thing Piaget and his workers talk of is the teenager's need for a conception of life that permits self-assertion and the creation of something new. Here, again, we can draw a reference for America. If we are going to ask them to be self-assertive in a positive, creative way, we have to give them the opportunities and the techniques. We have to define for them psychologically the goals they might attain.

One of the things that bother us so much is the extreme superficial identification of so many of these children psychologically whereby rock-'n'-roll singers become the great heroes. This is simply a sign of the kids' emptiness; it is simply a sign of our failure to give them some focus for their creative interest. They will find something if we do not provide better goals for them; they will move in these superficial, meaningless kinds of ways because their need for self-assertion will indeed find expression.

The third thing Piaget says is that they must have a guarantee that they will be more successful than their predecessors. He feels that basically adolescents have a remarkable capacity to be creative and are committed to being more successful than their elders. I think this is extremely important. It does mean that we have to be less threatened by teenagers; we have to give them the opportunity for self-expression and creative thinking, and all the other things, and allow them to be better than we, so to speak, without being threatened.

Piaget talks also of one of the conflicts of teenagers. They try, he says, to adapt their ego to the social environment at the same time they try to adapt the social environment to their ego. I think that is a good statement. This leads to a lot of trouble in family life.

I saw a child just the other day who demonstrated this beautifully. He was a mature boy with an interest in cars, which he demonstrated by

stealing three or four of them. He was only fourteen. The police conceived the idea of letting him take driver's training, which was a terrible mistake. He did; he passed the course with flying colors, but they would not let him take the road test because he was only fourteen. This boy could not see that; he had taken the course, and he was really adapting reality to his own ego. He said, "They let me take the course, and now I am going to drive. I finished the course." I could not persuade him otherwise.

This is what Piaget says, and much of their behavior reflects it. It is not selfish behavior; it is what he calls egocentric behavior, that is, behavior in which their own ego finds expression.

Lastly, he talks of the capacity of teenagers to think in terms of what he calls propositional logic; that is, being able to be abstract about things, to theorize well, and to find numerous solutions beyond themselves through the whole social and, in fact, even the cosmic universe, if there is an opportunity for free discussion and a kind of creative opportunity for this kind of thing for them.

Now, lastly, I would like to point out this has been of necessity a rather diffuse discussion, maybe because it is a diffuse subject. I have not talked too much about some of the practical implications of this for medical practice, but I think these may have been implied in what I said.

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DISCUSSION

DR. GARDNER. Thank you, Dr. Rabinovitch. I am in awe of the speaker, not only for his euphonious delivery, but also because he apparently understands the labyrinthine vastness of Piaget's writing.

DR. RABINOVITCH. The last chapter only.

DR. GARDNER. To my way of thinking he more resembles a medical Proust than any other person I have ever read.

DR. LITTLE. I wonder if Dr. Rabinovitch has any thoughts about the attitude of adolescents toward religion?

DR. RABINOVITCH. I do not know. I think the best way I can answer that question is to tell you a story. I was at a camp for young children whose parents were in the upper middle class. They had a Sunday affair at which they had a clergyman visiting, an extremely wordy gentleman. It was out under the sky, beside the water. It was a beautiful setting. He talked about the need to recognize that democracy meant equal opportunity for all, and how we must love everybody and the children of all religions, white children, Negro children, all children. This man talked a good deal about the Negro child, and our love for him.

There was a bright seven-year-old kid sitting next to me. He pulled my coat and whispered, "Hey, if they love them so much, how come we ain't got none in this here camp?" Which I thought was really a wonderful comment by a child on morality as preached.

Certainly, if religious principles were conveyed to teenagers, they would have tremendous meaningfulness for them. If religious preachment, without practice, is conveyed, it really sells them down the drain, and they know it. I think this is a real problem for them.

As I tried to comment earlier, from a psychologic point of view, I think many of them are very much preoccupied with the kind of value systems we develop. They recognize our ambivalence in some of these things, and, given leadership of a meaningful religious type, I think it can have extremely important value for them. We have to be most careful to practice exactly what we preach because there is no one more sensitive to double-dealing than the teenager.

DR. LITTLE. One of the things which came to my mind is that there is some pressure, and I am not sure how many religious groups this includes, to have the child make some kind of commitment towards an organized religion, say, at the end of the eighth grade. My own hunch has been that this is no time for him to do it because he cannot realistically do so then.

There is, it seems to me, in adolescence the desire for something of a religious nature which is meaningful and which hangs together and which makes sense. I wonder if it is true that the adolescent's failure to find this represents something that is lacking in what is presented to them?

DR. RABINOVITCH. I would like to make a brief comment. I think children have always tended to be rebellious from 13 to 18, or so. They rebel against the family religion at that time. They consider it

unsophisticated, but they come back to it. The point is, I think, one has to expect a kind of negativism in many of them at this time. They are trying to find independence, but at the same time the parents do have to give them a great deal of dependency, offer them the experiences, but recognize that they will, not infrequently, reject them at this age.

It seems to me that if we make not too much of an issue of this, they come back, so to speak, to the fold, and their religious identification usually follows the pattern of the family. They do it with ease and with comfort, when they reach young adulthood and find, in fact, great comfort and integrity.

It seems to me they need much discussion. They all have to go through a period. There was on our university campuses, a generation ago, perhaps more of this rebelliousness, well channeled along philosophic lines, through discussion, and a great deal of tolerance of difference of opinion. In recent history difference of opinion was not tolerated. Adults can stand it, but teenagers can't. They need opportunity for extreme freedom of expression, for experimenting with many philosophical ideas.

If they have the opportunity to deviate and, you might say, experiment in their thinking, which they do together, they try out their ideas on each other, banding together, and one is more startling than the other in the nonsense they talk. To them it isn't nonsense; it is normal experimentation. I wonder if we have closed the door a little bit in America to that kind of real freedom of discussion, in fact, even encouraging this, and whether this has not created some problems.

DR. GARDNER. I think this is a nice interchange. It brings to my mind a study that we might review at this juncture. Apropos of Dr. Little's remarks about the apparent need of children for religion, and Dr. Rabinovitch's remarks about children coming back into the fold later, it is of interest to examine the study made by Dr. Anne Roe of famous American scientists (A Psychologist Examines 64 Eminent Scientists. *Scientific American*, November, 1952, p. 21). Dr. Roe made a retrospective study of the environments of creative persons. The data indicated that these had *not* "come back" into the religious fold. In fact, her data were quite to the contrary. This is an interesting paradox in light of the foregoing discussion.

DR. RABINOVITCH. Maybe not the organized fold, but still the philosophic one, you might say.

DR. TYLER. My comments are related to what Dr. Rabinovitch has implied: that we must really know our patient. I think this point cannot

be too strongly emphasized. We are all looking for short cuts. In our haste to save our time and the patient's money, we lose our perspective, at times, and rely (not maliciously) on the belief that all symptoms will improve if given enough time. Because of this we do not always take a thorough history.

If any single point has come out over and over again at this meeting, it has been the fact that we must thoroughly know a patient, in order to treat him. We can do this either, as Dr. Rabinovitch suggested, by taking a detailed history or, as Dr. Shaw mentioned, by following our patient from the time of birth up until he has reached adult life, observing the history as it develops.

I think we can help our patient only when we can understand the current pathology in light of the past history. This applies equally to psychologic or physiologic pathology.

DR. SOLNIT. I was impressed that Dr. Rabinovitch said he thought altogether too much has been made of pathology in adolescence and too little emphasis has been placed on the positive, healthy aspects of adolescence. However, we do not know too much about normal, healthy adolescent development. To a large extent this is true because we have relied on psychiatrists, psychologists and social workers to tell us about adolescents; and these are the people who mainly see disturbed adolescents. The pediatrician, the family physician, the internist who might have had the opportunity to see more of the healthy adolescent has either not had the time or has found himself unprepared to deal with adolescents.

Consequently, you will notice that almost any survey of adolescence takes up the point of view of how the adults view them or how their symptoms call themselves to the attention of adults. Adolescence is a period of reorganization of previously erected psychic structures. As Dr. Rabinovitch has pointed out, adolescence will reflect earlier development as well as the new maturational changes.

Many people are concerned that it may not be a sign of normalcy or health when the teenager is mainly compliant, agreeable and pleasant, and does not show any evidence of the upsurging and unsettling effect of the adolescent maturational changes that lead to a reorganization of the personality. In an advancing development the teenager acquires the energies, skills and sensitivities that enable him to work, learn, and express himself creatively. These efforts crystallize out gradually during the unsettling process.

Pediatricians have a great challenge to follow adolescent patients carefully in such a way as to aid in the understanding of their healthy viscissitudes—to understand, for example, why certain of these children

who become unsettled in adolescence seem better able to solve finally some of the problems of young adulthood.

We have had a number of individuals speak to us this morning who have indicated their interest in talking to adolescents and have demonstrated that it is their interest in talking to them and listening to them that becomes a potent force, not only in helping them, but also in understanding the viscissitudes of health in adolescence.

DR. GARDNER. I think Dr. Solnit's remarks indicate we have not yet reached the development in our medical culture of the physician as a social worker in the sense used by Sigerist.

DR. PSATHAS. I would like to comment from a sociologist's point of view on the last point and on some of the points made by Dr. Rabinovitch. For many years we have carefully studied known delinquents, those who have been apprehended. Only recently have we begun to rephrase the problem and inquire of a normal sample of the community what their delinquent behavior is like. We find that individuals report that they have engaged in many delinquent activities though they were not caught. This makes a difference in our conception of who is the delinquent or what is delinquency.

In talking about adolescent problems we need a statistical norm derived by sampling the community, including more than just those individuals who come to us because of a particular problem, in order to understand better those who come with a specific problem. This sort of perspective is needed in understanding the particular symptoms presented by a specific individual. What are his peers like? What is everybody else going through? Is it exactly the same? Does this person differ only in the sense that he is a little more concerned about his problem, or is he completely different from all others?

The conception we have of much delinquency is that of a lower class kind of delinquency, because we take only those cases that are processed through and by legal agents. Many delinquent acts are engaged in by middle class individuals who are never apprehended, or, if they are, they are treated a little differently. They manage to avoid either arrest or punishment.

Another point I would like to comment on is that adolescence in our society is a particularly difficult period because, as Dr. Rabinovitch stated, the parents are at fault in not specifying clearly what we expect of adolescents. But it is a little too narrow, I think, to blame only the parents in a particular family, because the parents themselves are members of a larger group, that is, the society.

What I am suggesting here is that many of these problems of adolescence are a reflection of a much greater social problem which is not

something created by the parents of the particular child that comes in for treatment.

We place a great deal of emphasis during this time period on making decisions. We ask the adolescent to decide on a future job or the direction his education is going to take him. We are concerned sometimes about the decisions he makes, but we often do not give him enough responsibility in other areas of life so that this particular responsibility can be handled easily. We often prevent him from making or do not allow him enough opportunity to make decisions, minor kinds of decisions, which would be preparation for major decisions. In addition, we are not quite clear as to what values we would like our adolescents to adopt. In our society we find quite heterogenous and often inconsistent values. Probably all of us here could not agree as to what values we would like to inculcate in adolescents.

I am suggesting that much of the indecision we find, the problems that arise in this time period, are created by the society which does not provide a clear set of norms and values for the adolescent.

DR. RICHMOND. I would like to make one or two comments about Dr. Rabinovitch's presentation, and then pose a question at the level of clinical practice which I think he was begging, in part.

First, I am concerned with the matter of the adolescent defining some objectives for himself via the exploration of alternatives as Dr. Rabinovitch so lucidly pointed out. It seems to me that there have developed cultural phenomena which have narrowed the alternatives, at least so far as intellectual explorations are concerned.

I am thinking particularly of the postwar phenomenon of adults in their late 30's and early 40's experiencing one or another kind of embarrassment—or persecution, if you will—because of the very kinds of intellectual explorations they engaged in during their adolescence.

I think that many of us were inclined to view what was going on at that time as a private problem only of the persons involved. But I think that this has had an extremely significant impact on what is going on in college campuses today, for example. Students have raised the question, "If we explore various kinds of philosophic or political pathways, will this come back to haunt us several decades hence? And will we suffer adversity because of this?"

Thus what goes on during adolescence is important, but what comes after in terms of social and cultural patterns is also important in determining whether or not the adolescent really has open to him the kinds of alternatives which were discussed. I submit that many adolescents today are quite fearful of undertaking really free intellectual explorations because of what has transpired relatively recently in our culture.

Certain other trends have limited the alternatives available to the adolescent. As we have become more urbanized and suburbanized, work opportunities for the adolescent are not as great, a point Dr. Rabinovitch made. Opportunities for realistic kinds of job explorations are not as available as they were with the rural child several generations ago. The rural child had his chores, and there were no if's, and's or but's about it; these were the expectations, and they were jobs which every child fulfilled and upon which the family depended. It seems to me that we need to give serious attention to the provision of meaningful work opportunities for young people.

Now, to come to a practical question for us as clinicians. Dr. Rabinovitch, you mentioned the conflict that adolescents today face when they contrast what is preached with what is practiced. Whether it be in the religious context, whether it be in terms of ethical codes for behavior, they are very sensitive, as you have indicated, to the differences—often in high places—between what is preached and what is practiced. These are realistic in our culture, and we certainly cannot deny them as adolescents come to us.

As child psychiatrists or as pediatricians, we face the child, the adolescent, in a one-to-one relationship, and we have to have some kind of philosophic framework in which we can practice and in which we can deal with this kind of conflict. I wonder if you might have some suggestions to make in this connection, because the very conflict they are experiencing is one which we have to resolve operationally as practitioners in one way or another, if we are to help them. Otherwise, it seems to me we simply provide further diffusion. How can we do this in the face of this kind of cultural conflict?

DR. RABINOVITCH. That is a difficult question. I do not know. The only thing I can say is that we have gone through various periods in our treatment of adolescents. We are no longer a pal to an adolescent in trouble; we are a benign but exacting father in our psychotherapy with them.

I do think it is very, very important in our hospitals, in our schools and wherever we have contact with children that we try to set standards, carefully, reasonably and, if possible, by precept. It is not too difficult to be an ideal for an adolescent. Basically, they are very negative to the teachers verbally, but they have great respect for them. You always get them saying the same thing. They think she is a real battle-ax. "She is a terrible woman, and the homework she gives me—! But, boy, does she know her algebra!" and they light up. You get this constantly.

They experiment a great deal with words which do not mean too much, and I think they need that opportunity. Basically, they really

respect the people who come through. I am sure they look for heroes and look for extenuation. If they did not extenuate parents, I do not know where any of us would be, frankly. I think they do find many ways of making heroes out of people. This applies very much to the doctor, I am sure.

Let me give you some concrete examples. I think we have to stand up and be counted in relation to such things as steady dating among teenagers. I know some of my colleagues do not agree, but I think it is completely inappropriate to allow a 15-year-old boy to date steadily. I think it is ridiculous. They are not ready for it. It is completely inappropriate I think, biologically even, for them, and the same for girls, yet we observe these things.

I frequently get calls of this sort from a physician who says, "This mother has been sleeping with this kid for eight years. He is now fifteen and tried to strangle her last night. Unfortunately he did not succeed."

I will answer casually, "You have known this for eight years? It is a long time to know it and not do anything, really."

You get a lot of that, when people feel it is not quite their business, in terms of family values, in terms of standards of behavior. I think it is very much medicine's business. We have to have values. For instance, you may think this is silly, and it is in a way, but we think it is significant. We do not allow the children in the hospital to have long hair. They all have short hair. I do not allow them in the clinic. I think we have had very little trouble with them. We say, "Look, this just doesn't go here. We want to help you. We think this is a sign of your being anti-learning and really defying the kind of decent standards we have, and I really think you have to clean up." Occasionally we get one who doesn't. The large majority are waiting to do so. That is the kind of thing we can do.

I do not know whether that is what Dr. Richmond had in mind. I am sure he can answer the question better than I. I think this is the line along which we are talking. This applies to all sorts of things, like the hours they keep, and the kind of pattern we set for them, which can be communicated to them a lot more. I think many parents have become scared, and doctors, too. They feel maybe we do the wrong thing, so it is better to do nothing. People have become rather introspective about teenagers, feeling they will antagonize them. They are looking for direction. I am totally opposed to the "back to the woodshed" idea, the idea that you are going to beat them into submission. When you do that, they will behave for a while, but they will come back, and you will get counteraggression expressed in the community. I have never yet seen a sadistic child who was not brutalized by someone earlier in life. If we have to rely on threats and

physical beatings, my guess is we are going to have a lot more severe acting out than we do. There will be a quiescent period, of course, but this will not last.

When we talk about values and standards, we do not mean, for a moment, brutality or physical abuse; we simply mean being firm in a reasonable kind of way, and giving them really the direction that the squeaking ego of the teenager probably needs.

DR. SIMMONS. One thing that has concerned me about the discussion this afternoon is that we have expressed a lot of our own anxiety about adolescents, and we have talked, sociologically or culturally speaking, about some of the sources of the adolescent's anxiety. I think I would like to see us end on the adolescent's anxiety itself, which I believe comes first, before the setting of limits.

In the first place, as a child psychiatrist, I am not seeing adolescents in my office until very late, much too late. I wish I could have seen them last week, last year or five years ago. They are in serious trouble, either socially or in many other ways. But other adolescents, who are not in serious trouble, are some of the most talkative people I have ever known. They have their anxieties; they wear them on their sleeves, and they will talk about them and will focus on them to the man who will listen.

Perhaps the pediatrician is the man who can listen better than the psychiatrist. I do not know why—I am not seeing them until they have the haircut, a leather jacket and leather boots, with a knife slipped down the side. This is only one particular type of adolescent.

This morning Dr. Shaw and Dr. Gallagher raised the issue of authority versus authoritarianism. This has not really been explored far enough. I think authoritarianism reflects our anxiety about the adolescent. The more anxious we are about what we are doing, the more authoritarian we will have to be.

To be authoritative means two things: (1) that we can be reasonably secure about what we are doing, so that we can listen long enough for the adolescent to reveal his anxiety and focus his problems; and (2) we can give or withhold specific treatment as indicated rather than succumb to our own pressure to do something.

I think the pediatrician must see, if he sees adolescents at all, adolescents who have multiple hypochondriacal complaints. He knows, intellectually at least, this is a mask of anxiety. I think that many of these adolescents will talk to us about what the sources of these anxieties are. After we learn in which area his anxieties lie, our authoritativeness—not our authoritarianism—can be a therapeutic agent in dealing with the adolescent.

I do not think I have really said anything too different from what the others have said, but I did want to make this emphasis.

DR. SENN. Could I ask the discussant and then Dr. Rabinovitch a question? I would like to ask why the adolescent does not come to you sooner, earlier? Is this because the pediatrician or the agency in the community is following the axiom mentioned at least twice today, "Time will take care of things"? Pathology or behavior that is presumed to be abnormal may be recognized early, and some believe if we just give it time, it will disappear. Is this actually valid, to assume in the area of problems of behavior that time does take care of all things?

It has been my experience that the pediatrician frequently likes to believe that this behavior, like some physical symptoms, will disappear in time. I think one reason he feels this is not only his optimism, but also that he does not understand, does not know the meaning of the behavioral traits he sees early.

The question to Dr. Rabinovitch is, what signs do you think the pediatrician might recognize as potentially pathologic when he sees the child before adolescence?

DR. RABINOVITCH. You have taken unfair advantage of me. Dr. Senn knows much of the answer infinitely better than I do, and he is going to tell us tomorrow, I hope. I really do not know; it is hard to say.

I think most pediatricians who know children have a pretty good idea of where there is a disturbed child. The marriage of psychiatry and pediatrics is coming along, I think. It is not quite consummated as yet. There are mutual suspicions that sometimes stand in the way. I have had a good many referrals from people who have told the family, "Well, we have held out as long as we can."

You find many mothers not gratifying their infants—mothers who do not have the spontaneity, the motherliness, the maturity or sometimes the time, the money or the leisure really to be able to gratify their infants. There you will get a child who presumably may have a defect in depth capacity. You will find many mothers who are terribly frightened. Many mothers enjoy the children very well, as you know, in the first year, but as soon as the kid begins to walk around, they get frightened; they cannot stand the aggression, and they change their pattern. The pediatrician can often find ways to help a mother to be more relaxed.

Certainly the most difficult situation is when you have a lack of family integrity. When you have no real love between the parents pervading the home, I do not know what anybody can do. You hope a good case worker might help the parents find help. One of the real

problems is that help is not forthcoming. In many of our clinics we have a frightfully long waiting list covering several years. We now have some parents who feel that if they refer a child early enough to a guidance clinic, they might get geriatric help for the child ultimately. That is what it amounts to. It may be that a nonmedical specialty will take over. It may be that all these problems will be referred not to psychiatry or pediatrics, but to psychology or social work.

I personally feel that we have to see these workers in a team relationship with us, but, certainly, maintain leadership in the field of trying to handle these emotional problems. But it is going to take a tremendous additional amount of planning to get more workers in psychiatry than we now have. We simply have not found the solution.

I do not think the answer is more referrals, but more places to refer to, with shorter waiting lists, which is one of the major difficulties.

I might end my discussion by pointing out what Marie Rasey, who I think was one of our greatest teachers, wrote just before she died last year: "All these problems will take maturity and they will take time," and she added, "which is probably the reason for eternity," which I think is very acute.

DR. GARDNER. I would like to make two comments on this afternoon's discussion. First, I am impressed with the diversity of points of view, almost as diverse as the number of individuals involved. I think this is probably not surprising, in view of the apparent, relative lack of objective methodological techniques available for testing hypotheses.

It rather reminds me of the situation in a field such as endocrinology 50 years ago, when the lack of quantitative methodology left physicians only to tilt at semantic windmills. I get the impression that here now is a field in its infancy, one that is groping for objective techniques for assaying pathologic human interactions.

Secondly, I would like to make a comment along the line of remarks that Dr. Richmond discussed: the effect of the contemporary environment on the developing adolescent and college level student. What has happened in the past 10 or 15 years as a determinant of the milieu of thought of present-day young people?

I think this might be expressed as well as possible by the statement made in a recent TV interview of a college student who said, "We're cautious; we're real cautious." It actually is not so surprising that they would be cautious. We have been projected into an industrial civilization in which the organization man is the *ne plus ultra*. We are a mosaic of ethnic groups. Our respective cultural backgrounds are diverse. We are an uprooted mobile population swarming around large urban centers on this continent. More and more conformity is occurring, possibly as a result of our national tendency toward replication

not only of ourselves, but also of machines. Is it so surprising, then, that the adolescent and college level student do not know how to orient themselves? Where the parents had been is no longer there, and the image of the future does not resemble the traditional image of religion.

It is an illusion that youth is happy, an illusion of those who have lost it; but the young know they are wretched, for they are full of the truthless ideals which have been instilled into them, and each time they come in contact with the real they are bruised and wounded. It looks as if they were victims of a conspiracy; for the books they read, ideal by the necessity of selection, and the conversation of their elders, who look back upon the past through a rosy haze of forgetfulness, prepare them for an unreal life. They must discover for themselves that all they have read and all they have been told are lies, lies, lies; and each discovery is another nail driven into the body on the cross of life. The strange thing is that each one who has gone through that bitter disillusionment adds to it in his turn, unconsciously, by the power within him which is stronger than himself.—W. Somerset Maugham: *Of Human Bondage.*

PSYCHOLOGY OF PHYSICAL ILLNESS IN ADOLESCENTS

SHERMAN LITTLE, M.D.

The general psychology of adolescence has been amply covered, but a few points need to be re-emphasized as one views the adolescent in his reaction to physical illness. His reactions are often similar to and often specifically different from the reactions of individuals in other age groups. As we know, the adolescent in our culture is apt to go through a fairly difficult time. He is in an area where childhood and adulthood meet and overlap and where he is beginning to be able to approach some independence of thought and action. In order to affirm his capacity to do this, he often must reassure himself by some resistance to, rebellion against or rejection of parental standards. His impulses are stronger than they were in the past and will be in the future. Having, to an extent, cut himself off from parental controls and support, he is left to face these impulses with less assured defenses than he has previously had. He is faced with the problem of ascertaining whether he can cope not only with his inner turmoil, but also with the problems of decision and choice which adult existence poses for him.

Because of the increased intensity of his impulses, he is increasingly aware of his physical body. This raises questions and uncertainties, not only because of this, but also because this increased awareness reactivates many of the intense feelings he had about his own body, its capacities and physical configuration, in infancy and early childhood. One has the problem of establishing identity as a person who can become an acceptable adult, but this is inexorably tangled with the feelings and sensations which he has about his internal physical makeup and external appearance.

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Erikson speaks of the more psychologic aspects of the problem as an attempt to establish ego identity, which he defines as "a consistent and more or less conscious sense of the identity of what one was as a child in the family and of what one is about to become in society." It is also "a conception of oneself that one has gradually created, and that one perceives as one's role and reflection in others." The kind of relationships which he is able to achieve, especially with his parents, his peers, and other people whom he admires, helps him to define and to affirm the kind of person he can feel right about being.

One often, somewhat superficially, thinks of the adolescent as being quite independent. This is the side which is often most easy to see and to feel, but the adolescent is also, even though he is gathering his inner strengths, much dependent on people and opinion outside himself.

Erikson, quoting Faulkner, and using it in applying to the adolescent, said: "Sometimes I think it ain't none of us pure crazy and ain't none of us pure sane, until the balance of us talks him thataway."

As I mentioned earlier, all this is intimately related to the adolescent's increased awareness of and concern about his physical body. The image he has of himself physically has a close connection with his image of himself as a person. This is a two-way street, but, for our purposes this morning, we are more concerned with the image of the body as it affects the image of the self, and how this, in turn, affects the behavior and emotional adjustment of the individual.

From the work of Schilder and others we know that the body image varies with the kind and intensity of interactions which are taking place between the individual and his environment. Physical activity and aggressive sensations maintain and define the individual's awareness of the outer edges of his body. When the body is at rest, or the tonus is low, the boundaries of the body image become less sharp.

Now, if we may turn for a moment to the question of the effects of bodily illness in general. A good deal has been written on this, and one of the papers from which I am going to steal a good deal is Anna Freud's "The Role of Bodily Illness in the Mental Life of Children."

There is a change in the emotional atmosphere around the child who is ill. A few parents, afraid of overindulging or spoiling their child, leave him severely alone. The majority give more love and attention, and it may be the only time that the child has his mother entirely to himself.

Thirdly, the mother who, on the whole, has good sense in dealing with her child seems to forget it under the anxiety of illness, and resorts to such things as force feeding, enemas or deceiving the child about what is to be done to him, including such things as hospitalization and operations. Any or all of these reactions may be bewildering to a child. If illness has resulted in his getting more love and attention

than has been customary, he may find it hard to give this up. Some of this applies a little more to the younger child than to the adolescent, but it is still appropriate.

Illness itself subjects the individual to a variety of experiences. The experience of being nursed, particularly for adolescents and adults, but also for children, often seems to consist in a series of indignities. Many of you who read the paper know that I am almost quoting verbatim. One turns over one's body, often to a person of the opposite sex, to be handled passively. One frequently has to be helped with urination and defecation, and may, to a greater or less extent, be exposed naked to nurse and doctor.

In addition, one is subjected to hygienic routines which have an implied disregard for one's personal attitudes and preferences. In substance, one is treated as a baby.

In children and adolescents there is a threat to one's independence, which has been so newly won, as one loses control over newly acquired mastery of the body. In adolescence this comes at a time when the individual has many questions about the adequacy of himself, his body and his appearance, and when he is making attempts to see his whole body as his own.

Adolescents, particularly those who have had some question of their adequacy, as either male or female, and who have had to struggle against their strong leanings to play a much more passive and dependent role, may find themselves strongly tempted to give in, and this may produce violent counterreactions, or, if they do give in and relinquish their assertive and aggressive role, particularly if they are males, the reaction may be even more malignant.

The stimulation and contacts of their entire body, particularly to areas around the genitals or the buttocks, tend to exaggerate the strong sexual feelings they already have. This stimulates their already active fantasy life and is apt to tie closely together their hostile and aggressive impulses, which are exaggerated by their immobility.

With their heightened sexual impulses, this may manifest itself by a variety of behavior, including some exhibitionism, smutty talk, profanity, things which are calculated to be stimulating and embarrassing to others, and may stimulate, of course, a certain amount of masturbation, other sexual practices, sometimes direct and sometimes in rather indirect forms.

There is some evidence that in boys rectal swabs and injections into the buttocks stimulate some passive homosexual feelings. Often, as a reaction, there is a good deal of negativism, irritating and difficult behavior, verbal aggression, restlessness and hyperirritability.

Food restriction is not a great problem if the individual actually feels sick, because the appetite is usually decreased, but as the indi-

vidual feels better, and, particularly, if one of the major sources of emotional satisfaction has been through eating, he may feel deprived and unloved. This is especially apt to be true in the individual who has some kind of long-lasting condition and is on special diets of various kinds, such as diabetes or allergy or some sort of prolonged gastrointestinal disturbance.

It is interesting that, although operations are tolerated reasonably well in adolescence, the most severe postoperative breakdowns are apt to occur in the child who unconsciously has wanted to play a passive, even feminine role, and who, in a sense, gives in and accepts the operation as accomplishing his feminine castration wish.

Some children react to illness during the acute disturbance by withdrawing all interests outside themselves and lying quietly immobile until they feel better. In the acute situation this is not pathological, but it can cause alarm in both parents and medical attendants.

A more usual reaction is in the individual who becomes fussy and demanding. I want to illustrate this with some case material, and I shall start off with essentially verbatim notes that I took of an interview with an adolescent girl, although her problem was not physical illness. I use it because I think it exemplifies many of the things that are in the minds of the adolescent, sick or well, and which may be exaggerated and distorted by being ill.

This girl had some real problems, and some of this will show in this interview, but I think the material is still a fair picture, although sometimes slightly exaggerated and not complete, of what adolescents do have on their minds about themselves.

People say they don't care about things, that they are not concerned because of all the crime and things. Perhaps they care too much and can't show it. They say you can't do anything. I don't see how people can go along without thinking. They take things from their parents and church without thinking, but I don't know why more people aren't that way.

The more I think about it, the more I don't like the world around. I don't see how people stand it. Some people think we're living in a pretty good world. There is so much hypocrisy in religion, I think. It seems very wrong to me.

It is morally bad to participate in anything wrong. Some people keep up appearances. Sometimes a strong-minded character can do what is right. Being an adolescent, I want to be liked, yet I never wanted to be liked too much.

I try to type myself. That's awful. All the tests in magazines, I fall for them, for all of them. I analyze myself. The trouble is you can figure out what the questions are leading to. I say, "If I answered this way, what would it turn out?" My cousin says I should answer it spontaneously.

[I comment this is hard. There are some other comments of mine which I have not put in.]

I try to type myself into one category—model after my mother, but I find I keep changing around, even my handwriting.

The thing that is the most natural for me I like the least. Once in a while I print. Printing is more my type, writing is more emotional. I usually write large, but I want to write it small and very, very neat. I don't like to do what I want to do.

I make up my mind in advance how I am going to act, yet with certain people I change. I hate that, it's inconsistency.

With a certain girl, we are like ten-year olds. I like it. My mother said it is a good idea.

I usually go around with a sour look, especially at school. If I could only be one way all the time. I'd like to have the answers all figured out in advance. I wish you didn't have to wait for experience.

If you keep busy, you don't have to figure. It doesn't work that way for me. It would be cheating myself. I have to do it even if it makes me uncomfortable. It's hard to know what's honest. If I only believed in my religion as I used to. I think you can have principles without religion. Most people don't think that way.

I don't see how people can stand the world today. Things are so vast.

[I commented that the individual perhaps feels as though he can get lost in the shuffle.]

I would hate myself to get lost. I feel I have to have highest quality. I often get some insignificant thing because it is the best I can afford. I can't stand anything but the best. I like everything around me to be perfect.

People call me an old maid. People think if you are orderly and neat, you're an old maid. Trying to get everything perfect drives me nuts. I take hours to brush my teeth. I repeat actions over and over again. So sure something must be wrong. I can't omit anything; it slows me down. I don't know what would happen if I didn't. I'd fall apart. I can't stop not doing it.

If I'm going out, I hate to leave my room messy, rather keep people waiting. I might die on the way. People would see my room and decide what I am like. I'm so worried about the impression I make. I want them to understand.

Everything I do is so important. In my reading, I hate to leave something out. Magazines—that is my downfall. I read them all, afraid I'm going to miss something, come across somebody's philosophy of life which will be what I am looking for and will teach me a lesson.

I fantasy. I should tell you sometime. It takes more and more of my time—on buses, at school, I sit and look out the window. I suppose all people do; I don't know, I wish I had more time for it. Can't wait to start or get alone. It can almost apply to real life. It makes me hate to get up in the morning. I have home work and I get to bed at irregular hours. I used to oversleep. [I think she still does.] I am going to try to do better, but I'm tired. I lack sleep. No matter how late I go to bed or how tired, I take an hour to think about things. I carry myself along, never just go to bed.

It leaves you wanting more of it. You build up situations. It takes time. Everybody who comes in has to be typed. Age means so much to me.

I have to have a good story, a complete picture, whole families, six people, everybody filled in, has to be plausible; with a few points stretched it could be real. I find myself being very different. If I could be as sweet as I am there. You cannot have a temper. I am quite a noble character. If I could be like that in everyday life.

Sometimes I wish I had a terrible disease to prove things to others. I always have to prove things to others.

Then there are some other things she said: "It will be wonderful when I go to college"—the idea being she would be in a large group where people didn't know her and she said, "because you can't change when people know you."

I do not think, as I say, that this presents the total picture. It is a somewhat exaggerated one, but it is not out of keeping with many things one encounters in the adolescent.

The adolescent is confronted with this problem of establishing himself as a person, is very concerned with his body image and his picture

of himself as a physical person in many ways, and the two things interact on each other. Cutting down on activity, and restrictions which illness is apt to impose, drive him into fantasy life; having various kinds of physical ministrations makes his whole body an area that is physically stimulated and stimulates even more the sexual fantasy and interest that the adolescent has.

Aggression is stirred up because of all these things that they can't do anything about, from the restrictions of being in bed, and from the lack of opportunity to be oneself in action, so to speak. All these things, it seems to me, play a role. There are some others, but I shall leave that to the discussion.

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DISCUSSION

DR. NOSHPITZ. There are some additional aspects to illness in adolescence that I would like to mention. One of them is the reaction of the adolescent to the notion of dying. Death has a unique and peculiar role to play in the life of adolescents because these youngsters feel so very much alive. When one has suddenly been given an increased capacity for experience and pleasure and opportunity, socially and otherwise, then the meaning of losing it all is infinitely greater, especially since one's intellect now can encompass it in a way not possible when one was younger.

I have had a number of different experiences in this connection while working with disturbed adolescents. The youngsters I have seen have been the ones who courted death rather than the ones who avoided it. There is a rather well known phrase that the delinquents like to use. They say, "Live fast, die young and make a beautiful corpse." It is a kind of immortality. One does not permit the body's aging process to deprive one of any of the things that have just been acquired. Thus the courting of death is very much a part of some adolescents' lives just as the fear of it is a part of adolescent life.

Those of you who have known adult patients who have had a morbid dread of death have probably heard them say, if you know them well enough, that this began in adolescence.

I would like to cite one brief experience I had while I was in charge of a children's unit at a state hospital. We had seven youngsters in residence, six of whom decided to commit group suicide. They got some Energine cleaning fluid, which one of them said was poison. They stood around in a circle and passed the Energine cup from hand to hand, each quaffing more or less, depending upon how much he wanted to die right then and there. Anybody who didn't drink was of course "chicken."

Finally, the seventh youngster, who had had an uncle die from drinking Energine, got kind of upset, knowing these six were drinking it, because she feared she would lose all her friends. So she went and told. We then learned that we had six poisoned youngsters on our hands. I immediately dived for the Energine bottle, and when I read "carbon tetrachloride" on the label, my hair stood on end.

We began to try to do things, stomach pumps, and that sort of thing. There was massive resistance. Finally we had to cart the whole bunch off to the insulin ward, where we could have adequate pumps, adequate staff and the necessary emergency equipment. You can imagine the reaction of the insulin unit staff, who had to stop insulin treatment for the time being.

The leader of the group and the boy who had taken more Energine than anybody else—I guess he was about 14 at the time—got renal shutdown. He did not urinate for about 17 hours, I think. I don't know how severe a renal shutdown that would be in comparative terms; I know it was pretty scary for us. Managing him was terrible. He wouldn't comply with the most elementary hygienic measures; he wouldn't get on the bed. By use of threats and force we finally got him on the bed, but he wouldn't take his shoes off.

This complete denial and defiance of the potentiality of dying, a possibility he was very well aware of—indeed, the whole point of taking the stuff with the avowed intention of dying—struck me as not entirely unique in my experience with disturbed teenagers. I think, too, that awareness of such factors might perhaps be an important part in their management when they have serious illnesses.

One other aspect that I would like to add to Dr. Little's discussion is the question of managing teenagers who have casts or bodily limitations of one kind or another. I think there is a world of discussion one can get into there, and I would like simply to mention two brief incidents.

One concerns a borderline psychotic girl. We tried to heal a serious cut. She refused to keep a bandage on the cut. We tried to keep her hand in mittens, and finally she ended up wearing a body cast which she eventually tore off.

A second one concerns a young lady who was the most severe run-

away problem we had in this hospital unit. It was our custom once a year to take our children to a certain free fair in Topeka. Everyone looked forward to this. We went in a body. It did not matter how disturbed the patients were, we always took them. This particular girl was, however, an unusually difficult problem. We pondered: How in the world could we take such a girl? She always runs away and is into the most serious sorts of delinquent acts on these runaways. Inspiration struck. We would put her in a walking cast, which would limit her movements—in this way she could not run very well. We put it up to her: Would she go under those conditions? She was delighted. I put the walking cast on and hoped we were not cutting off any circulation. We took her, and afterward it was a hard job getting the cast off. She was so happy and proud, she wanted to have it around.

This sort of reaction suggests to me that there is perhaps a good deal we might do in investigating our sick adolescents not only from the point of view of their interest in health, but also from their interest in self-injury.

DR. LITTLE. Do you feel this is apt to be somewhat more prominent in the children labeled as disturbed? If they are in with others, their fear, their preoccupation with death comes out in much more masked ways. If a child with cancer is confronted with the possibility of death, there is great denial.

DR. NOSHPITZ. I think I will be able to answer that question perhaps better a year from now. At the National Institutes of Health there is a cancer study ward whose population consists almost entirely of children and teenagers. I plan during the next year to just wander up and hang around there because I am interested in this problem of the child's attitude toward death. I haven't done it yet, so I can't answer it.

DR. RICHMOND. Dr. Solnit, you have been interested in this problem and various other problems related to physical illness in this age period. Would you like to make some comments?

DR. SOLNIT. I think Dr. Little has again made us aware of the continuum from young childhood into adolescence; how adolescence can be illuminated by the insights that result from understanding younger children.

As has been stated, many adolescents are less ill physically, and therefore one does not see them as frequently as at an earlier age. However, in adolescence there frequently is a hypersensitivity to feeling states, physical and emotional, and there is an increased concern about physical health.

Physical states of discomfort are often feared by adolescents as representing a threat to their adult potential. They fear that illness in adolescence will leave an imprint upon them that will curtail or limit their adult potentialities. This is a very intense fear.

There is a good deal of magic thinking that goes on at such times. Often this is noted as an increased religiosity or superstitiousness. Under the impact of physical illness the adolescent often experiences the physical ailment as a punishment for sexual feelings and activities, or for his angry rebellious feelings. In children with chronic illness there may be an emphatic denial of the disease and its symptoms. This represents a most difficult therapeutic challenge, because it may be too painful for the teenager to envisage the feared effect of the illness on their aspirations. When a thought is too painful and threatening, the teenager will often deny it, although such denial may endanger their personal health. They may become very angry at the doctors who tell them they have chronic disease and advise a plan of treatment.

Recently on our pediatric service a child refused psychiatric help which had been recommended. After denying the diagnosis and treatment of diabetes mellitus she had been hospitalized three or four times for severe diabetic acidosis. She had actively opposed the proper treatment for her metabolic condition. She was finally able to accept the interest of a conscientious and accepting pediatrician. At this point the young lady told her doctor about her tolerances. She felt she could accept the psychologic guidance of the pediatrician who was protecting her physical health. For her the thought that she had both diabetes mellitus and psychiatric disorder was overwhelming.

There is another important principle in the care of adolescents with chronic illness. They can be expected to feel angry at the doctors for not restoring their health—for not providing them with a new body.

Acne is one of the opportunities presented to the pediatrician for getting to know the adolescent who is concerned about the size of his body, about the proportions of his body, and about his eventual sexual identification.

Bill, who was 14, came to see a pediatrician for very mild acne. The pediatrician did a careful history and physical examination and gave him advice about the symptomatic care of this condition. He asked Bill when he would like to come back to check on it. Bill said he would like to come back in a week. When he came back, he had not followed any of the directions of the physician, but talked about his family, especially his older sister, and about school. When the doctor asked him if he would like to come back, since he had not used the advice, he said he would like to come back in another week. The advice had centered on advising Bill about skin cleansing.

The next week Bill returned, and the doctor asked him how the treatment had worked. Bill said, "I didn't use it." So they talked further, and this time talked more about the family, school and home. One had the impression that Bill was trying to get to know the doctor a little better, as well as letting the doctor get to know him. Again, Bill said he would like to come back in a week.

The next week the same thing happened. After four visits a week apart he asked,

"By the way, Doc, this skin condition, does that mean you're a sissy?" The pediatrician asked what he meant. He said that his sister had been kidding him about the pimples on his face, and he wanted to know if there was something wrong with him as a boy. The pediatrician, who had already initially conducted a complete physical examination, was able to reassure him about this again, and to ask him more about it. It turned out there was a good deal of teasing between the boy and his sister, who was one and a half years older than Bill and had budded in her own sexuality considerably ahead of Bill. She teased him about his relative slowness in sexual development.

The next week Bill came, having not followed the advice again. The acne, fortunately, was mild. He said this was the last time he wanted to come; he felt very good; things were going fine, but he had brought a friend along that he wanted to introduce to the pediatrician because this friend had the same problem, and he thought he would benefit from the same kind of complete medical care.

For boys, especially, the matter of body size is important. The other day a 13½-year-old boy, somewhat on the small side, said to me, "Well, you know, if you don't do what the others do, they think you are a sissy. They are already going out with girls and smoking and talking about beards. I don't know what to do when they ask me to join them." He said he had been thinking about it, though, and wondered how it would sound if he answered the question, "Have a cigarette?" by saying, "Thanks, I've given that up already."

DR. GREEN. Would you comment about plastic surgical procedures in adolescents?

DR. SOLNIT. Dr. Green is referring to the fact that often the wish to transform the body and to overcome what the child perceives or experiences as a defect in the body, either through the mole or through the protuberant ear, is heightened at adolescence. The deviation in the boy means that he has a defect and will turn out to be a sissy or feminine creature. For the girl this deviation may mean she is not going to be the paragon of beauty she would like to be. She may fear her inability to have a successful social life. At this time one does have a number of requests for magical transformations of the body which will somehow be a guarantee that these fears will not come true.

For these reasons one should enter into plastic surgery, such as removal of moles, cautiously in adolescence. People who have carried out these surgical or medical procedures for the removal of moles or alterations of the body may find themselves confronted with a depressed, angry adolescent who now faces the fact that the operation has not brought about a miracle. The confrontation with other problems, now that the cosmetic deviation has been removed as the apparent cause of their difficulties, precipitates an unexpected and at times overwhelming depression.

DR. RICHMOND. Time is running on, but we might have one more comment if someone feels so inclined.

DR. GALLAGHER. In connection with the care of the adolescent in the hospital, it certainly is well to remember that many have great fear of death. Not infrequently those adolescents who are faced with death will indulge in what nurses and others consider unacceptable kinds of behavior. This is anxiety which they are expressing in this way. Instead of being angered and mad at them, if one can take time to go in and talk to them, much can be accomplished. They need somebody *there*, somebody there who himself is not afraid of death. Yet many of these youngsters in hospital are faced with young people (interns and student nurses) who still have considerable fear of death themselves, and from these they get little benefit.

Another side of all this is that ambulatory patients who have physical symptoms of anxiety which you do not quite understand may have this because, without any basis for it, they feel threatened by death. This, of course, is typically the youngster who has a friend who has a similar sort of ailment: the boy whose friend has a brain tumor now develops a headache himself.

Still another aspect of all this is the question of surgical procedures in this age group, and the need of carefully preparing these youngsters for such procedures. We should never underestimate the possibility that the surgical procedure which we take so casually, and do so routinely, may be extremely disturbing to the adolescent. Certainly, the usual 14- and 15-year-old male adolescent is a poor subject for certain of the surgical procedures which we suggest blithely and really do not adequately prepare them for.

DR. RICHMOND. In bringing this section of the morning's program to a close, I would like to pick up some of the comments that have been made, and extend them a little bit, in the light of our experiences. I think the point which Dr. Gallagher has just been making is an extremely important one, and that is that we understand each adolescent in light of the idiosyncratic story he brings with him as a person, and that we not regard the experiences that we as pediatricians subject him to as being routine and without any impact on him.

I think the point that Dr. Little made earlier concerning the individuality with which each adolescent develops a self-concept, particularly about his body, is extremely important. It is only as we come to learn more about each child's concept (including distortions and fantasies) of his body that I think we can begin to understand somewhat more clearly why he develops the kinds of responses that he does and, indeed, why he develops some of the diseases that he does.

In this connection, we have found very useful a concept concerning body image that Dr. Szasz of our Department of Psychiatry has recently suggested. This is a concept which parallels that of the develop-

ment of what the psychiatrists call "object relationships," that is, relationships with people—the kind of thing Dr. Rabinovitch was talking about yesterday as the development of one-to-one relationships. As the infant grows and develops, his first experiences are largely with a single individual. From this he begins to generalize his experiences. Just as we think of his development of relationships with people, so Szasz has emphasized that we should also think of his development of a relationship with his body as an object, and that this is idiosyncratic and unique for the individual—as we know from personal experience.

I think that is particularly important when we concern ourselves with the development of the so-called psychosomatic disorders in this age period. Adolescents are particularly prone to develop this group of disorders: that is, peptic ulcer, ulcerative colitis, bronchial asthma, eczema, hypertension, obesity and anorexia nervosa.

Children in this age period tend to be particularly vulnerable because of the stresses we have talked about. In our experience—a point Dr. Margaret Gerard made some years ago—we not uncommonly find disturbances in physiologic function or the development of these disorders not after sexual maturity, but rather in the prepubescent period. In other words, in many instances, just before pubescence has been attained, the child's anxiety may be greater about himself, in anticipation of the change, in anticipation of uncertainty. It is at this time that the conflict may result in disordered bodily function. Precisely how it does this we do not know as yet. We can speculate that this is related to constitutional predisposition and to experiences which the individual has had. The interaction of constitutional factors and experiences determines how the adolescent comes to view parts of his body and how his body functions.

I think the point that Dr. Solnit made concerning the role which the adolescent assigns to the pediatrician as being the protector of his body, as it were, is extremely important. Often the pediatrician does not seem to appreciate the importance of this. If he identifies a major psychologic component to the illness, he may say, "Well, the psychiatrist can handle all this," without recognizing the importance which the adolescent attaches to the pediatrician's role in preserving bodily function. Particularly in this group of adolescents with disorders which we refer to as psychosomatic, which one can readily turn over most of the care of to the psychiatrist and bow out as the pediatrician, I would hope this would tend not to occur.

THE ANTISOCIAL OR ASOCIAL ADOLESCENT

On the Etiology of Adolescent Delinquency

JOSEPH D. NOSHPITZ, M.D.

This is a pretty complex field, and I have chosen to touch on only a few aspects of it. I feel a bit like what they said about the French king who opposed King Henry V at the Battle of Agincourt. He is alleged to have lost the battle because he put all his Basques in one exit. Well, I am also going to touch on just a few aspects of this, but I hope I do not lose the battle.

This is a speculative paper. In it I seek to juxtapose ideas to ideas rather than ideas to clinical facts. The clinical facts of juvenile delinquency are all about us—what seems to be difficult is how to make sense out of these facts. With this in mind I would like to review here certain aspects of what we know about the etiology of antisocial adolescent behavior.

There have been many theories formulated in this area and numerous critiques of the many theories. Basic to all modern thinking is, of course, the often-quoted idea of multiple etiology. It takes many variables, dependent and independent, physiological and familial, cultural and subcultural, not to mention geographic and social, to produce an antisocial teenager. Nor can we afford to minimize the possible role of that enormously meaningful variable—chance—in the development of our subject. There has been a certain evolution of theories over the years; at one time they tended to be constitutional à la Lombroso's criminal types; whereas, currently, thinking tends more toward the sociological (so much so, in fact, that our diagnostic language has come to include the term "sociopath," and every psychiatrist knows what anomie means). Perhaps the most variable of all the many con-

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ceptions are those that have sprung from psychiatric and psychoanalytical studies—these include such notions as the "criminal from a sense of guilt," primary psychogenic acathexis, super-ego defect, hyperkinetic behavior syndrome, youngsters acting out the lacunae in the parents' super-ego, Fritz Redl's seven areas of problem, and the like. Nor have the varieties of teenagers and their types of trouble been any less various than the theories about them—displaced Puerto Ricans in New York vie with the scions of Hollywood stars for their place in the headlines about youngsters in trouble. Hence, in selecting among the clinical realities on the one hand, and the pertinent theoretic material on the other, I needs must leave out much, gloss over more, and inevitably give inadequate treatment to what's left.

Recognizing these limitations, I would like arbitrarily to isolate for study certain elements from among the many influences that contribute to the formation of the delinquent. In particular I would like to focus on a triad of factors.

The triad consists of overstimulation, overgratification and overdeprivation. Now, the observation that any one of these well known influences is important in the begetting of delinquency scarcely needs restatement. What I believe to be indicated, however, is to demonstrate the relationship between these factors and the essential nature of adolescence—to bring together, so to speak, what we know about the provoking element and about the material on which it works, and to try to demonstrate that the particular emergent from this conjunction can be juvenile delinquency. I propose, then, first to look at some of what may happen in childhood that can twist or distort what might otherwise be a normal ego, and second, to speculate on what can take place when the normal problems of puberty impinge on this deformed ego. To document this in more detail, let me take up each of the prongs of the triad separately and in some detail.

OVERSTIMULATION

To begin with, then, overstimulation. One of the most interesting and characteristic facets of the teenager's way of life is what we might call "sensation-hunger." For whatever reasons, perhaps because of his physiologic growth and the acquisition of sexual maturity; perhaps because of some developmental change in the nervous system; again, possibly as a result of the psychologic progress that came with his maturational spurt—many a teenager shows an interest in feeling things intensely and experiencing new sensations. It's a pervasive characteristic that extends into almost every nook and cranny of teen-age life. For example, it expresses itself in music—the youngster likes to be "sent"; it appears in the form of dramatic self-visualization—he likes to suffer or exult

with Castro or some other colorful figure of the day; it is characteristic of his play—the youngster loves to join in pep rallies and team spirit; it pours into sexual acts and feelings—he likes to fantasy and, often, to act in wildly promiscuous ways; it manifests itself in the area of aggression—he dreams of and sometimes runs off in fact to fight in Spain or Cuba or wherever; and the fervor with which ideological or poetic issues are taken up is commonplace.

Now an essential ingredient in each of these activities is the youngster's desire to feel deeply, to be sensation-drunk, to be transported, to be possessed. He recognizes that adults don't feel things this way for the most part, and he regards them as lacking in something, therefore—adults are "squares" or even "cubes" because they don't lend themselves to the quest for sensation, but rather prefer, as he sees them, to stay at home and prate platitudes. The total lack of such sensation-hunger in an adolescent would, in my opinion, be a part of the pathology of adolescence in the same sense that the total lack of significant involvement in or conviction about anything would be a part of the pathology of adulthood. Normally, we expect this sensation-hunger to be channeled into the established outlets provided by our culture—sports, jam sessions, necking parties, study groups, religious organizations, social or parasocial movements such as Zionism or political party activities, and, last but not least, educational channels.

There is one sensation that is particularly germane to our study, however, that is somewhat less successfully provided for—and that is the experience of danger. We tend to be a rather safe culture, and we prefer not to provide our youth with lots of opportunity for physical injury—to the extent that an adolescent is going to want to experiment with mastering anxiety that involves the threat of physical danger, he's going to have to go out and find his own way of doing this. Of course, if he's good at sublimating, he'll handle it adequately in sports such as skiing and mountain climbing; but if he isn't, he'll drive a car too fast, or get into rumbles, or otherwise pit himself against the police. I would like to distinguish here between the problem, let us say, of needing to battle authority, and the simpler situation of restlessly wanting a "kick" of some kind—it is probable that the importance of sensation-hunger in antisocial behavior at this time of life is too often overlooked: a lot of the apparently meaningless vandalistic and negative behavior of such teenagers has as one essential ingredient the high priority placed on getting a thrill—this, I believe, might tip the scales in many a situation of doubt in which, lacking this, some daredevil, dangerous idea might be talked about or fantasied about, but never acted on. Nevertheless, to my mind this sort of business is not a major source of juvenile delinquency in and of itself; I mention it to illustrate the presence and the quality of what I mean by the term "sensation-

hunger." Deep-rooted antisocial behavior and thrill-seeking activity are not identical, and to understand and manage our teenager we had better know when we are dealing with a problem that needs education of some kind and one that needs treatment.

What we must ask ourselves, however, is this: Over and beyond the borderline situations, how much does sensation-hunger play a role in the genesis of the more serious acting-out behavior, and what childhood factors in particular mesh with it to produce this behavior? Neither of these questions is ripe for the final answer; they are food only for speculation.

Within that fold, however, a number of possibilities come to mind. There is at least one group of children characterized by hyperkinesis and impulsivity, who are viewed by many thoughtful child psychiatrists as constituting a specific constitutional type; this hyperkinetic group is readily susceptible to all manner of stimulation, is excitable and arouseable in the extreme, and shows this tendency from birth onward. Although not inevitably delinquent, some hyperkinetic youngsters do move in that direction. Again, however, this group constitutes a minority of acting-out delinquents; certainly there are many antisocial teenagers who do not give this history.

On the other hand, a much more frequent finding in the background of antisocial youngsters, and the one I am interested in here, is a history of prolonged and significant overstimulation. This is a connection which is richly documented in the psychoanalytic literature. The stimulation may take many forms; e.g., there may be a history of the little boy sleeping with his mother or an older sister for many years; there may be a history of parents tickling the youngsters and engaging in much body play with him as well as dressing and undressing in his presence. There may be, on the other hand, a more sadistic quality in the relationship, e.g., repeated whippings on the bare body, or spankings with the child held in some intimate way; the youngster may have had many opportunities to see sex relations of parents or servants, and so on. There is much to suggest that such events, if they occur repeatedly in the first five years of the child's life (and the element of prolongation of the overstimulation is very much of the essence), tend to gear the youngster's psychologic apparatus to a high titer of excitement and, as it were, give him an enormous appetite for sensation. Since, as described above, this avidity to feel things is likely to receive a considerable normal reinforcement with the onset of puberty, such a rearing can thus provide one of the important breeding grounds for the sort of behavior that might become "antisocial."

To look at this a little more closely, what we find during such a childhood is an immature ego, at best none too capable of handling excitement, receiving frequent large doses of stimulation that flood

and overwhelm it, and thus inevitably alter its structure. An ego thus attacked may react in a variety of ways—for example, it may constrict down, repressing, denying and squelching all emotions so as to produce an unhedonic, empty sort of person. More typically, it will develop a need for this type of overstimulation and adapt itself structurally in the direction of re-experiencing more of the same. It will build in, in short, a set of techniques calculated to keep it supplied with the sensation it has got so used to. This tendency then, is already well developed when the normal sensation-hunger of adolescence arises, and from this combination serious consequences can well ensue.

In this connection it is interesting to note that in residential treatment situations in which colorful, aggressive, leader-type delinquent youngsters have responded well to therapy, they often tend to become flat, neutral, uninteresting sorts of people—as though in the process of mastering their impulses and appetites they had to get so much under control that they just flattened out emotionally. Alas for the hope that all this leadership potential could be harnessed toward socially positive goals—in the severe cases it seldom is.

This, then, is the first element in the triad. Although it makes for a specific quality in teen-age adjustment, it is not in itself a sufficient cause for antisocial activity. Even an extremely sensation-hungry child does not *have* to violate the law unless the particular childhood experiences were such as so to reinforce grossly pathologic appetites—e.g., fire setting or pederasty—that there is no satisfying them without antisocial behavior.

OVERGRATIFICATION

We turn now the the second element in our triad—that of overgratification. This is a particularly complex business. Again we are dealing with the effect of a set of early childhood experiences on the ego and the interaction of the injured ego with a set of characteristic adolescent traits. Let us start with the latter.

Adolescents are normally and necessarily in search of adult possibilities of gratification. They want the fun that they conceive adulthood to be; they aspire to the privileges they observe adults to possess. They feel capable of doing many of the things the grownups do, and often of doing it better. There is a certain sense of capacity, and of being entitled to freedom and privilege by virtue of their capacity, that suffuses the teenagers either intermittently or continually. They "can't see why they shouldn't be allowed" the car, the makeup, the smoking pattern, the late hours, and all the many other external signs of maturity they see all around them. There is a peculiar pressure to these demands, so much so that they take hierarchical primacy over the

normal reasoning processes—indeed, the most normal youngsters may bring forth the most illogical and outlandish reasons to substantiate their claims to being allowed something or other—and find it at times practically impossible to understand why they should be limited in their aspirations to adult privilege. They're frustrated and don't like it; they complain, and often they try to do something about it. It is precisely this normal quality of adolescence that becomes involved in the issue we are discussing here.

In such a culture as ours in which most ceremonial and socially supported techniques for achieving adulthood have been eliminated, the teenagers must find their own way to adulthood. Typically they proceed to handle the problem by means of revolt against their past. This rebellion is directed against parental attitudes, childhood roles, conventional rules, and the like. But we must ask ourselves: What do they have to rebel with? What equipment are they provided with to enable them thus to carry out their achievement of individuality, their break away from dependency on the parents, their establishment of societal role, and the like? After all, as Moses found in the desert, a person steeped in obedience does not easily and readily become free, independent and successfully aggressive. Similarly, youngsters who, though not necessarily cowed and inhibited, have nevertheless had a successful training in obedience may do their share of rebelling and be perfectly adequate adolescents, but they do not usually make the most successful delinquents. Some other kind of training is necessary, and it is here that the element of overgratification seems to me to be especially pertinent.

For the overgratified child's conception of limits from the very earliest time in its life is nebulous and vague, and includes the possibility of getting almost anything it wants. Such a child is often trained to feel that its wishes have a certain mandatory quality to them; by virtue of the mere indication of the youngster's desire, action is immediately initiated in the world of adults to gratify, to supply a substitute, or to apologize for the inability to give what is demanded. This is a type of training that can take many forms; a common one is for the parent at first to say no, but at length to yield to the child's wheedling. The child is simply irresistible, and though the parent's judgment tells him this isn't for the best, he must give in. This logically leads to a deformation of the child's character—impulses exist to be gratified, not to be given up or delayed, and any nongratification becomes wrong, a dirty trick, not fair. A certain primitivization of character ensues, or rather a failure to develop so that a primitive quality remains, and when the inevitable demands for adult gratifications at 13 can't be met, the frustration experienced is infinitely greater, and the defiant reaction more violent.

Another way this sort of overgratification occurs is when the adult makes the declarative, "You can't do so and so," and then carefully fails to notice what he knows perfectly well to be happening, i.e., that so and so *is* being done. Here the lip service given to the forbidding introduces elements of deceit and parental inadequacy into the picture that are particularly malignant. Indeed, there usually is a feeling of impotence on the parent's part—he tells himself helplessly, "I can't make the child behave." Investigations in recent years have revealed that what thus seems to be simple weakness often serves as a defense which enables the parent to avoid awareness of an unconscious desire on his part to enjoy the behavior his youngster is thus led into. Adelaide Johnson and her co-workers have beautifully demonstrated the form and consequences of this latter type of "permissiveness" in their collaborative therapy approach and have shown how the parent in effect puts the child up to acting out the parent's own antisocial wishes.

Another style of overgratification is to forbid before the act and then, all too readily, to forgive afterward, so that the education which the child receives says, in effect, there is no way to lose mother's love—no matter what one does, it is always there, ready, waiting, and available for possession, so that one can do as one pleases.

An important by-product of this last sort of rearing is a special quality of manipulativeness the child learns. One cannot lose mother's love, but there are rituals that must be followed; first, for example, one lies, and mother—or father—always believes and defends. Then, if one is discovered in the lie, there are patterns and techniques for professing guilt and sorrow, for buttering up Mom or softening up Dad—numerous cues are exchanged, with parents saying, in effect, if you use this formula on me or that, all will be well; and the child replying with the formula. Thus the "spoiling" of the youngster proceeds apace, plus the training in how to get away with anything. This is the underlying substrate on which puberty presently bursts in full regalia and claims for its own.

Now the puberal child is going to ask, Why can't I have what grownups have? and is going to try to get what grownups possess, and he will in fact get it symbolically, or in displaced ways, or in partial ways, depending on how he has been brought up to get things. The youngsters we deal with here are going to have all their assumptions of entitlement to things present long before they reach their teens. With the pressures of puberty upon them they may well begin to take things and get away with things on quite a different scale than heretofore. For now it will be not candy, but cars, not pennies, but dollars, and not lap sitting, but sexual intercourse or perversion that will become their goals—and suddenly we may be into a pattern of manifest delinquency. And here is where parents begin to get shocked, for the degree, the

kind, the seriousness of what was gotten away with before seem to have given them no hint of what was to come—with expensive and explosive results. Sometimes in well-to-do homes the parents have given most of the rearing of the children into the hands of nursemaids who proceed to spoil the youngsters at a great rate; the parents later reap the results of this with honest puzzlement. What did they do to deserve this except to give their child the best? Incidentally, an adequate description of the degrees and kinds of underlimiting and overgratifying that take place in a particular household is often hard to obtain clearly in the initial history-taking process. The parents may simply fail to make the connections between their pattern of managing the child and the eventual outbreak of symptoms.

It takes an ususual ego to resist the effects of such a limit-lacking rearing. The very nature of the developmental process is going to prod a child into demanding, resistant, negative behavior during certain phases; without adequate training and support during these periods a warping of the ego tends to take place. When to this is added the element of a training in manipulativeness, a really thoroughgoing psychopathy can emerge with minimal assistance from time and circumstance. Inevitably, a wide variety of adventitious factors come into play in every such situation—the personal beauty or ugliness of the child, its innate intelligence, its mechanical aptitude, and a host of other conflict-free or chance elements. Thus, for example, if a high intelligence quotient happens to be present, a truly alarming and formidable individual may result by the time adolescence is reached.

Again, it should be clear that these types of overgratification do not in and of themselves create delinquency. There are many spoiled children who become petulant, vain, demanding or otherwise "difficult" adults without necessarily becoming antisocial. As a predisposing element, however, this is a powerful factor, indeed.

OVERDEPRIVATION

We now arrive at the third limb of the triad—the overdeprivation aspect of adolescent disturbance. This is in many ways the best documented of the three; the concept of parental rejection and its many negative effects on childhood emotional development are often-demonstrated themes in the psychiatric literature. What we have here in brief is the child who cries and no one pays any attention; or the child who gets a lot of the wrong kind of attention and not enough of the right kind—the child, for example, who is given toys and money galore, but is not kissed goodnight because it disturbs mother's makeup, or, more serious still, the youngster who gets plenty of criticism and reproof when he does something wrong, but whose fear of the dark or

whose need for a particular toy at bedtime is regarded as trivial, a subject for shaming, or a cause for punishment. This style of handling is not rejection in the sense of neglect—the child does not necessarily go hungry or without nice clothes—it does, however, involve a failure to meet the significant needs of the youngster in a major way. Rejection in this sense can be gross or can be rather subtle. For example, a somewhat indirect form is typical of the family structure in which the youngster is a pawn in a parental battle. Even a relatively insensitive child soon becomes aware that no one is interested in him for himself alone. In Kantian terms, he is a means to an end and not an end in himself, and this inevitably begets a sense of cynical distrust.

On the other hand, the classic example of the extreme type of rejection is the child who grows up in a primitive, poverty-stricken household in which the narcissistic parents are unable and/or unwilling to give him even regular meals, let alone interest or affection, so that, as a consequence, the child is angry and feels fully justified in his solidified hostility and distrust practically from birth on. Thus the feeling that "no one really cares about me" can come early in life and leave its residuum regardless of whether the lack of care comes from the overt neglect of a Tobacco Road type of environment where both food and its symbolic equivalents are missing or whether it arises in the setting where the poor little rich boy is handled antiseptically and fed dehydrated emotional rations that can't be swallowed. It makes a difference, of course, which particular variety of rejection and deprivation is encountered, in what form expressed, and to what degree mitigated by an older sibling, a friend, a servant or even a pet. The essential result of it all, however, is much the same: a conviction that you can't get what you need out of life, certainly not in any honest, straightforward way, and possibly not at all. The responsible people about really can't be trusted; the only thing anyone looks out for is his own angle; everyone is selfish, they're out for what they can get, and it's dog eat dog. So that the only problem that remains is, how to be top dog.

There is an interesting psychologic event that takes place some time in the course of adolescence. At some point the youngster makes a startling discovery that principles that he thought applied only to him and his folks actually have general value and apply to everyone. Thus the sense that one's parents really don't care which pervaded childhood might be broadened during the teens to the concept that no one cares, people are all selfish. And when the youngster has achieved this idea, he feels that he has now made a step in learning how to live, a philosophy of life has developed, and he has a useful, solid guidepost for future relations. A host of other generalizations of this sort emerge: You can't trust anybody, there's a little larceny in everyone, it's only a

matter of who gets caught, and so forth. These serve both as rationalizations of antisocial behavior, and as more general modes of building up a style of life, of social relationship, of reality perception, and of over-all behavioral adjustment. It is striking to one who begins work in this field to find some young teenager prating this sort of cynical philosophy during an interview and using it to justify the most outlandish behavior.

In the course of therapy with a disturbed 16-year-old who was the son of a well-to-do lawyer, I asked once, early in the work, what his earliest memory was. He responded with an account of an incident which occurred when he was four or five. He had been playing with a window which had slipped and caught his fingers so that he could not free himself and was in great pain. He screamed loudly, but even though his mother was in the kitchen, she did not come because she thought he was just playing. He was trapped that way for about five minutes before he was finally heeded and helped. I was not surprised a few months later when he was in the hospital in connection with compulsive car stealing to have him explain that he only did what other people would do if they got the chance—people did what they could get away with, no one was any more honest than circumstances forced him to be. To imply a linear connection between two such events in the face of the huge number of variables and influences in any such situation is obviously to imply what is not demonstrable to begin with and, at the very best, grossly oversimplified to end with. Nevertheless the connection seems to me to be there on some level; i.e., it were as though since no one had cared about him, no one really cared about anyone, and hence any sort of behavior "went" if one could get away with it.

Let me now continue with the theme of this study and attempt to connect this group of "deprivations" with significant normal factors in adolescent growth. One of the classic and central facets of the normal adolescent style of life is the search for separateness from the world of parents and parental values. This surge away from the parent is primarily a matter of flight from the libidinal bonds of early childhood which have been revived by the movement of puberty. The youngster flies from the primary sensuous interest in the parents that was a normal part of childhood; he has to free up his love interest and make it available for some new object; he has to give up his dependency bonds to a large extent if he's going to become an independent man or woman; he has to develop a mind of his own and guiding principles of his own; and to that end he has to flee with greater or less momentum from much that held his interest and guided his behavior in the past. He finds a language of his own, a hair-do of his own, clothing arrangements that are unique, social patterns that are

distinctive, and alongside this he needs to enter on a simultaneous devaluation of the previously highly valued father and mother. The parents are old fashioned, they don't understand, there's no use trying to talk to them, they're spoil sports who are always trying to keep everyone from having a good time; in particular they seem intent on preventing a teenager from tasting any of the pleasures of adulthood, and there grows in the child's mind a sneaking suspicion that maybe they don't *want* their son or daughter to grow up, they don't *want* them to have a chance to experience and experiment with mature sensations—and the battle is on! Now to fight such a battle alone is dangerous and lonesome. The odds against one are after all superior, the techniques for fighting are new and untried, and the youngster almost invariably casts about for help and support. Over and above the need for help there is also the vital business of having an enormous increase in one's capacity to love, so much so that it preys on one's mind considerably, and this at the same time that the childhood love object became unusable. Both the need for dependency, support and reinforcement, and the search for libidinal objects drive the youngsters to increasing interest in each other. As they fly from the parental circle, they re-establish their own substitute-family groups, set up their own rules, and draw strength from each other for their mutual home struggles.

If, then, we bring this normal state of flight from the parents and suspicion of parental intentions into conjunction with a rearing that to begin with has bred a deep sense of distrust and a profound tendency to see the parents as denying, frustrating, inimical figures, the picture that emerges can be a violent one, indeed. For to the young child the parents are the whole world; and the rejection by the parents with the anger that comes in its train is not so much displaced to the world as, in a primary sense, it is seen as belonging to the world. It is part of the task of adolescence to help the youngster distinguish definitively between the parental world and the rest of the world. When the well has been poisoned to begin with, the problem of making the appropriate distinction is often not even essayed. There is simply an intensification of what has already been adjudged to be the case with the world, and the war now is not only with the parents, it is with everyone. Hence our rebel without a cause.

One of the most difficult types of adjustment to deal with is this adolescent position of determined hostility, based on years of experience, which the adolescent can readily justify for himself with plenty of convincing documentation. Obviously it is a situation made to order for seeking strength, support and gratification in the world of nonadults together with others who are of a similar outlook—and the delinquent gang emerges as an emotional necessity for such a group of children. Youngsters who have *not* had this rearing may join a gang

and engage in delinquency for "kicks," or because in their neighborhood you had better belong or else, but they will as often as not keep out of the more serious kinds of trouble, or will sooner or later leave the gang and strike out on some tangent of their own. They do not experience the gang as a vital source of emotional security in the same sense as the child who has no other source. Again, numerous external factors can play a role in who does belong to a gang and who doesn't, or how the member acts even if he is in the gang. A gang is not a static thing—once formed, it develops its own rules, its own code, its own pattern of behavior—and something can come to grow into a situation which the youngster did not anticipate when he joined. Here, however, we move into another major area from which it is perhaps best to withdraw for the moment in favor of our sociologic colleagues with this comment: A large percentage of delinquent acts are the product of some sort of group interaction. The youngsters have found a new family with new mores more in keeping with what makes sense in their lives, and most of them live it as they've learned it. Erikson summed this up well when he said:

> In delinquent areas much basic mistrust may be created early in life where there is not enough consistency and eunomie to create the kind of trust which stable areas can afford to foster. In these circumstances, children have to learn very early to get along without much trust and, later, to make a common virtue of mistrust. This, however, works only if in the next stage there is an opportunity to live out successfully (i.e., with social approval) a resultant precocious autonomy development, and a successful defense against shame and doubt. You will recognize this combination of bitter mistrust, total self-assurance, and utter lack of conventional shame that forms the characterological base of the delinquent kind of sanity. "The world is no good anyway" becomes an ideology—almost a negative Utopia—for a whole group of toughies who make the righteous judge so angry because they imply that people do not differ much and that the judge under certain conditions would surely do exactly as they did.

I should say in this connection that I do not agree that the element of social approval is a necessary one for the consolidation of a delinquent character. I think such social approval is usually present, but I believe I have seen the same sort of situation develop when the youngsters involved were essentially isolates with no visible gang or group affiliation to support them.

INTERACTION OF FACTORS

Now, the basic point of all the preceding material is this: In my opinion, the really severe, committed delinquents are products of the whole triad operating at once. I think that these cases will have come from backgrounds where they experienced prolonged sexual and/or sadistic overstimulation, significant emotional deprivation, and a real lack of adequate limits. This may or may not be complicated by the substitution of material for emotional giving, the use of lies and two-faced be-

havior by the parents in the service of their discipline, or the attempt on the parents' part to obtain satisfaction of their own repressed delinquent wishes through the symptomatic behavior of their children.

Obviously to trace down and weed out how the elements of such a triad interact with one another and feed into the total picture is a massive job in any given case. It is easier to get an impressionistic feeling for such ideas than to document them scientifically. Some of this can be and has been done in child analyses. For illustrative purposes, however, I wish merely to present a caseworker's account of a visit to the home of a severe acting-out 12-year-old boy who was in residential treatment. During the interview the worker had a chance to observe the mother's handling of the patient's younger sister. The interview, written in the first person by the worker (Mr. Walter Sceery), reads as follows:

Mother was concerned today about Betty's adjustment in school and produced a number of the child's school papers with comments from the teacher criticizing the sloppiness of the work and Betty's inability to finish or complete her assignments. There were also complaints about Betty's not minding the teacher and doing just about what she pleases in the classroom. After looking over the papers with Mother I felt the comments were quite fair but Mother said she thought the teacher was a very strict demanding person and wondered whether she should take this up with the principal in an effort to get pressure applied to the teacher so that she would be less demanding of Betty.

About this time Betty came into the house from school bringing along a little friend with her. She took off her coat and dropped it on the floor. Mother asked to see the lunchbox that she had brought home. In the lunchbox were the papers from Betty's lunch, as well as school papers that she had worked on today, and a change purse. Mother opened the change purse and found several pennies in it. She asked Betty what had become of the dollar she had given her this morning. Mother then explained to me that they were having a party in school and Betty needed 15 cents for the party and 4 cents for her milk today. Since Mother had no change she gave Betty a dollar, and said that she was to bring home the change. Betty explained that she had bought a pencil box and some colored pencils and crayons as well as a large rubber eraser. Mother said that she had done this three times this week and it had to stop. Betty responded by saying that she was hungry and went out into the kitchen. Her little friend went along with her but shortly reappeared and said that Betty was lighting matches. Mother called out and told her to put the matches down. Betty said she was just trying to light a candle. To this Mother responded that she was to put the matches down. When nothing happened, Mother again told her to stop playing with matches and the little girl reported back again saying that Betty was still playing with matches. Mother then yelled out that she was going to burn Betty's hand with a match if she didn't stop and aside to me said this is what they have done with the brother [who was our patient]. I commented it hadn't worked too well with him as he was still playing with matches from time to time. For several minutes Mother's attention was diverted as she recalled how her husband had taken their son's hand and put it over the gas flame after the youngster had started a fire in his closet when he was small. Another report from the little friend came in that Betty was still lighting matches. Mother called her and insisted that she come into the living room. Betty came as far as the dining room carrying a book of matches and a candle. She continued to light matches and blow them out in the dining room with Mother telling her to stop and Betty saying that she wanted to light them because it was fun. Mother finally insisted that Betty bring the candle and matches to her, which after some pressure she did. Thereupon Mother lit the candle and handed it to Betty.

Betty reacted by blowing the candle out, picking up the book of matches and lighting another one in order to relight the candle. Mother again threatened her with burning her hand with a match. Betty threatened her mother that she would report any burning of her that she did to her father. Mother commented that Betty could get away with anything with her father and then repeated to Betty that she was to put the matches down. Betty began to whine and then to run around the room with the lighted candle screaming so that Mother's protest could not be heard. I finally interjected that sometimes children were not able to do things for themselves and parents had to do them for them. To this Mother replied that Betty will get tired of it in time and put it down herself. Mother then attempted to divert Betty's attention by suggesting they play with dolls which I doubt Betty heard, as she was still screaming. Mother finally insisted that both girls go out, whereupon Betty sat the lighted candle on the table, put on her coat, picked it up and ran out the door with the candle aflame. Mother commented that when Betty ran around the yard in the wind it would blow the candle out, and since she had left the matches or what was left of the matches on the table, she would be unable to light it again. She then took the matches herself and put them in her pocket and seemed to close the incident.

I submit that Betty's character is here in a *late stage* of the process of being ground and shaped the way a telescope lens is ground and given its exact curvature and its high polish. Each day of such living does its bit. The overstimulation that comes from the fire play itself, from the threat of burning and from whatever the mother actually does do when the worker isn't around; the fantastic degree to which the failure of any controls is carried, coupled with the implicit inducement to acting up seen in the way the money and the fire were handled; and the over-all sense of the child deprived of any significant mothering in the situation at all—an emotional problem is solved by sending her outside, carrying fire: all these together will come to a focus as built-in elements in Betty's character. To my mind these will collectively prepare for a serious disturbance when puberty hits.

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DISCUSSION

DR. RABINOVITCH. I enjoyed Dr. Noshpitz's paper tremendously. I think it was an extremely good summary and quite original in many areas, also very thought-provoking. It led me, of course, to think about what we can do about all this. I do not know. I suppose those of you who deal in the private practice area of pediatrics or in other research areas

do not have quite the opportunity to see the tremendous level of mutilation of children. What he was really describing was, I suppose, eight ways to mutilate children, and they are done every day by many, many thousands of families.

In our public clinics, such as ours at Hawthorne, and the kind of experience Dr. Noshpitz has had with Fritz Redl's group, we see literally hundreds of kids. It is a real challenge to know what we can do with them. We can predict pretty well in some ways, not all ways, which children will become delinquent. I think we have a good deal of knowledge about psychopathology of children today, but, unfortunately, we have limited resources to do anything about what we know.

It seems to me extremely important that we recognize that literally thousands of children need more than we can offer them. Obviously, intensive psychotherapy is not the answer. With the ego defect, with the super-ego defect, it is a poor answer. People still go about with their heads in the clouds, saying, "If I could only have the patient eight times a week, or something, we would cure him." They do not cure him. Occasionally they do very well with an acting-out child, but not too often, especially when you leave them at home. Our results are not nearly good enough.

The real problem is that we are getting the long-term deprivations, overstimulations or overgratifications, whatever you wish to call them, too late. I do not know what pediatrics can do about this. I think many pediatricians are probably aware of what is going on, but they, too, have not found ways of stepping in. The real challenge will be to do so.

Obviously, a great many children need placement away from home. These are sick parents. A little case work is not going to cure them. You do not have a family of the type Dr. Noshpitz described without great sickness in the mother.

We have also put too much faith, probably, in our magical capacities to do something with these families by a little support here and there. We have allowed them to go to the dogs, their sicknesses to encompass the entire family and their children, and then we can no longer meet their needs. Whether early intervention, really early, is the answer here should be investigated. Whether placement for a good many of these children away from home is not needed also needs discussion. I think it is needed.

I do think that when we see a clear-cut pattern of total neglect of children or corruption of their growth potentials by sickness within a family, we have to ask ourselves: What responsibility do we have at least to work towards placement? We cannot grab the children and take them to court, obviously, although occasionally we should, and even more often than we do. But availability of group placement for

these children, as well as people to work with the parents towards releasing them, at least temporarily, until we can step in seems to be the answer.

Many of the things Dr. Noshpitz described do not, of course, particularly lead to delinquency; they simply lead, in many cases, to anxiety and neuroses in children—the child who is not given his toy at night, has fear of the dark, and whose mother does not comfort him; the child who feels abandoned because of lack of emotional rapport from his parent.

We do have to ask ourselves and should design careful research work around this question: What type of experiences or, even more important, what type of emotional tone within the family leads to the later externalization of the problem or "acting out," and what type of experiences or tone tends to lead to internalization or the development of neurotic symptoms?

We think the answer lies in the first few years. I personally am quite convinced that it is those first years, in which the level of gratification or one-to-one opportunity for deep emotional interchange from mother to child is present, that is the crucial factor. I feel strongly about this, although there has been recently, as you know, some material that tends to move in the opposite direction.

No child can be understood apart from his family, and that Dr. Noshpitz gave us a remarkable insight into. No family can be understood apart from its community, either. I think this is important. Many families today are moving or have moved in the direction of the kind of overpermissiveness that he deplored, because this has become the suburbs pattern, I think. People have not found within themselves the strength to resist some of the trends that have been established, I think, by the most aggressive people in the community, sometimes the most corrupt. I know Dr. Hollingshead knows much more about this and may discuss it. We ourselves are impressed in our clinical work by this fact.

There appears to be a big discrepancy in our communities between the community values and the home values, with the values in the home a lot higher. The kids, however, are moving into community values more and more. I think we cannot evaluate the kind of pressures that Dr. Noshpitz described, without seeing them in relation not only to child and family values, but community values, too.

One example, last of all, in relation to this is the plight of Negro children today. I know the percentage of delinquents among Negro children is high, and among Puerto Ricans in New York, of course, is very high. The minority groups tend to produce a relatively large share of reported delinquents for two reasons: First, nobody comes to their rescue, and they are immediately sent to court, where they fill out sta-

tistics, whereas if our children get into trouble, we have all sorts of ways of protecting them.

A much more important reason is, I believe, that there is beyond the family itself a need for counteraggression developing in some of these children, regardless of their family experiences and even because of good family experiences. I think I have seen a good many Negro children who have become delinquent because they have felt a need to strike back against the community on behalf of their families, with whom they are relating well. I think this is extremely important to remember. The present thing that is happening in relation to schooling is having, I think, national repercussions in the inner life and in the emotional experiences of Negro children.

In the long run, I think, the major responsibility of prevention of delinquency is going to be medicine's. We know, I would say, a lot more than we are doing at the moment. Dr. Noshpitz's material was particularly interesting to me because implied in it are numerous applications for our preventive practice.

DR. RICHMOND. I am very much in conflict about time, since the discussion is very stimulating. I am a little reluctant to conclude the discussion of this particular topic without posing a question of what the pediatrician might do about intercepting some of these problems at an earlier point.

Dr. Senn, do you want to make a comment on this?

DR. SENN. Anticipating a little bit what I will say in two minutes from now, it seems to me important that the pediatrician recognize the importance of the early years psychologically, in terms of being prehistory, in terms of what is going to happen later. The pediatrician has, particularly in the realm of the psychologic, tended to disclaim a relationship between early life experiences and later life experiences because no one could clearly, to his satisfaction, show the cause-and-effect relationship.

So I think, first of all, we have to help the pediatrician understand the meaning of early life experiences in a cause-and-effect relationship. I think the pediatrician frequently hesitates to call behavior pathological; as I tried to emphasize yesterday, he tends to hope things will turn out all right, so he minimizes what he fears may be pathology.

I am not as sure as Dr. Rabinovitch is that medicine is the answer. I think we are living in a very sick society. I do not know how much we as doctors are able to change this society. Our goals in the professions and in business and the changing codes of behavior I think are often deplorable. I think it is too easy to say, "Well, we will just go back to religion" as the answer, because I am as sick with Norman

Vincent Peale's remedies as I am with anybody else's on Madison Avenue.

DR. RICHMOND. I do not think, in a conference conducted under the auspices of a department of pediatrics, I could introduce Dr. Senn without saying a word of appreciation for the great leadership that he has manifested on the American scene and in American pediatrics particularly, fostering a much deeper understanding of the psychologic and social development of children. I think we have all been stimulated by his leadership. He has certainly provided a model for a great many of us to emulate. It is with great pleasure that I have the opportunity of introducing Dr. Senn.

SOME LEARNING PROBLEMS IN ADOLESCENCE

MILTON J. E. SENN, M.D.

Before Dr. Julius Richmond times my presentation, I would like to make a few comments about the history of the Department of Pediatrics at Indiana. It is said that Yale College, like its mother, Harvard, has been the parent of many teaching institutions over the country. I remember that years ago Beloit College in Wisconsin was called "The Yale of the West." I see very clearly that one might call the Indiana University Department of Pediatrics "The Yale Department of Pediatrics of the Middle West." And the Yale contingent that is visiting here now takes great pleasure in being here and in seeing many of you whose faces appear in photographs down the halls of Fitkin 3 and 4 in New Haven.

What I would like to talk about are some learning problems in adolescence, and the subtitle might be, "Things are not always what they seem."

It is timely and pertinent that a conference on adolescence include consideration of learning and nonlearning in that period. Shaken by the advances in Russian science recently, the *many* have become concerned with what the *few* Americans have long worried about: the failure of our educational system to truly educate the majority of our citizens. Then, too, the practicing pediatrician finds that he is being asked increasingly to advise parents about schools and learning problems.

Today it is popular to lay the blame for this on "progressive education," the inadequacies of teacher-training programs, and the rise of technical schools over the liberal arts colleges. Such prominent Americans as Admiral Rickover, the scientist Wernher von Braun, and the poets W. H. Auden and Mark Van Doren, have the same solution: Teach teachers "content," and there will be no need to teach them method of instruction or the facts of human behavior and development. "If a teacher knows his subject (i.e. content) his students will learn. All students are alike. Make learning difficult, painful and they

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will all learn." So spoke Mark Van Doren at a recent meeting of the Bank Street College of Education in New York City. Some critics would delineate narrowly the subject matter each high school student should really know; some prescribe science and mathematics as core subjects, while others stress philosophy, literature and history as embodied in the "Great Books."

This is not the place to analyze the criticisms or the remedies of the major critics of American education, but I cannot help saying that I doubt very much whether the progressive education movement ever had extensive influence in our public educational system, which after all is the main system our children are exposed to. The term "progressive" has been used to connote change, without consideration of whether the new developments were truly progressive or originated from the educational movement sponsored by John Dewey—*the progressive educational movement*. Nor do I believe that all children or students of any age are alike, or that they have equal opportunities socially and economically to obtain an education. Nor do I believe that however well a teacher knows his subject, his students automatically and with equal facility will learn what that teacher is expected to teach. Ideally, a teacher should always be master of his subject; such a teacher is more likely to give guidance and stimulation to his pupils in learning. A teacher who does not know thoroughly his material will not only fail to teach it, by may discourage other learning.

Today I prefer to consider the nonlearning problems of adolescents who were alike only in that they were physically healthy, had average or better than average intelligence, and whose teachers were assumed to know their subjects. This narrowing of the human subjects for the present discussion is done to meet the criteria of critics such as Van Doren and permits assessment of those nonlearners whose difficulty stems not from sensory deficiencies, such as visual and auditory handicaps, or from deficits of the intellect due to poor mental equipment which are the causes for much nonlearning. What I will discuss here are the adolescents who failed to learn *subject matter* and for that reason frequently dropped out of high school despite excellent physical and intellectual endowment and conditions of school learning which were considered ideal. I choose subject matter rather than ability to reason and to think independently (which many of us would put as the real goals of education) because today there is so much emphasis outside educational circles, as well as within them, on the need to learn "subjects" not only for their content, but also for the disciplinary value such learning has. Some of their teachers even had good liberal arts training, with an emphasis on philosophy and history, and with little indoctrination in so-called methods of teaching. These are criteria often mentioned as also being important in judging a teacher's competence.

This is not a statistical study. My remarks are based on a general but critical appraisal of a large group of adolescents whom I have seen as a school physician in a suburban public school system in Westchester, New York, and as a consultant to school administrators and teachers in private schools of New York City and New Haven. In passing, I must credit my interest in schools and the education of adolescents to the stimulation of the late Dr. Caroline Zachry, with whom I was associated as a faculty member of the Vassar College Summer Institute in 1940 and 1941.

The group of nonlearners I am focusing on represents the adolescents whose problems stemmed from psychologic, usually neurotic, involvements, the so-called psychogenically determined difficulties. The last 10 years have seen an increasing number of such children referred to child guidance clinics and to other psychiatric resources. In fact, this group represents the largest single group of referrals to our Child Study Center at present. The peaks of highest incidence for such referrals are in the springtime of the third year of high school, when faculties have raised doubts about the pupils' readiness for promotion to a final year of secondary education, and when serious doubts have arisen about the propriety of considering college for such students. This coincides with the time students are expected to know without reservations what their life's work will be and what schools are right for them—some of a person's most important decisions. Another peak is during the middle of the first year of high school, when children have begun to fail high school subjects in spite of their good and even excellent primary school records. This group includes children with high intelligence who fail no single subjects, but many and even all subjects. Often there was a suddenness of nonlearning. There are smaller peaks scattered throughout the first three years of high school, which follow times of examination. These peaks are all related to stressful situations, arising either endogenously or from something in the school milieu. Sometimes there are combinations of these stresses which cooperate to interfere with the adolescent's learning and school performance.

A large number of referrals in the junior year seem directly related to stress from school pressure in attempts to get the child ready for a "good college"; schools are encouraged by parents to press children in this, and the competitiveness in children themselves fosters worry. The anxiety arising from such tension may be so great as to paralyze some children in their school performance to a degree which marks them as unsuitable candidates by college admission committees. Such children, anticipating rejection for college, are tempted to give up their efforts at learning and, in feelings of defeat, to consider dropping out of high school.

ENDOGENOUS FACTORS

The great number of learning problems in children soon after their admission to high school seems related less to their unreadiness for secondary school education on an intellectual basis than on an unreadiness for the psychologic and social challenges which come with higher education. Contrary to Van Doren, children *are different*. Adolescents are different from what they were as younger children, and one adolescent differs from another. Each has had many and differing experiences. The longness of childhood permits exposure to happy and unhappy experiences, some of which are fraught with great anxiety. Childhood, by its very nature of frequent and extensive change, invites anxiety and insecurity. In no stage of this development is this more true than in adolescence. These changes do not come simultaneously to all adolescents of similar age, nor do they come with the same quantitative or qualitative ingredients. This accounts for some adolescents responding to puberty with greater emotional upheaval, and for some coping less successfully than others.

One of the most common endogenous mechanisms accountable for this is the upsurge of new feelings, probably the result of hormonal influences, which overwhelm the child with their strangeness and inexplicability. As his thoughts seem to revolve about himself he is distracted from his school work, finds it difficult to concentrate mentally, to think rationally or to remember. Such students are often called lazy or low-effort pupils, and admonished to work harder. Many try to improve their work habits; some then achieve success in satisfying school requirements through a self-regulatory resolution of their conflicts. Others require special help psychologically before they are able to settle down into better patterns of conforming intellectually and socially.

There are other endogenous causes of poor learning in adolescence. I am referring to the reactivation of early life conflicts which accompany emotional reorganization of the personality in that period of life. The adjustment of old to new dependencies, the threat of independence, the demands of new realities, the dilemma around decisions of every variety do not proceed without calling forth a reactivation of patterns laid down in earlier years. In our patients we have frequently seen a similarity between the difficulties of adjustment in adolescence to those the individuals experienced when they first started grammar school, or even preschool. The psychologist Terman, in the early years of this century, in his doctoral thesis called the preschool period the "first adolescence." The importance of helping the young child overcome his emotional conflicts successfully, when they involve such matters as separation from parents on starting school life, is thus em-

phasized as a preventive of later-life difficulties in the realm of independence and dependence conflicts. The first weeks and months after starting high school, especially if the student is away from home for the first time, as when he attends boarding school, may be difficult ones as he tries to learn, but does not succeed because daydreams about home and family and "the other school" intrude and deflect his energy to study. He may or may not recognize this as homesickness. This is an escape from unpleasant conflicts, is unplanned by the student, and quite unconscious. The poet Yeats described his own learning difficulty in this way: "Because I had found it hard to attend to anything less interesting than my thoughts, I was difficult to teach."

Another type of failure to learn is that wherein a child works too hard to excel. He specializes in some area, often narrow, in which he becomes proficient, but this is at the expense of success in other academic subjects and in other activities and relationships. Such a student will have high grades in one subject, and yet fail others. His superintellectualization is a defense mechanism, sometimes helping him to avoid social contacts in other areas which threaten him. Although protective to some degree, it is also handicapping, academically as well as socially.

Nonlearning frequently follows acute reactions to great emotional distress such as grief. The adolescent whose parent dies may have an exaggerated grief reaction arising from guilt which is felt because the child blames himself. The inevitable parent-adolescent conflict is interpreted by the adolescent as predisposing to the parent's susceptibility to injury and to death. Although this is an irrational assumption, the adolescent often has difficulty believing that he is blameless. Sometimes penance drives him to thoughts and actions which interfere with his learning. The young person broods about his relationships with his parents, and retrospectively thinks out ways in which he might have made restitution for the ill done his parent. The result is prolonged and deep grieving.

Guilt feelings which adolescents have about going to high school because their parents did not have such advantages, or because parents did not wholeheartedly approve, may also lead to feelings of unworthiness and then to inability to master successfully curricular materials. The child brings about his own school failure, as it were, in order to remain in the same social status as his parents. He feels it is not proper or ethical to rise above them. I am reminded of the time when a young colleague of mine on a low salary was offered a substantial raise in pay, but declined it because this would put his annual earnings above those of his father, who had spent 25 years in teaching. I have known young people who felt unable to work in a private school setting because their parents had always believed in public edu-

cation as being more democratic and for that reason more suitable for the all-American child.

We all know of conditions in which lack of education of a parent served as a goad to a child to obtain what his forebears had not achieved. Such an adolescent may be said to have successfully overcome his earlier conflicts in the parent-child relationships unless his drive to supersede is so exaggerated that it serves him neurotically.

Occasionally high school pupils, like others, have failed to achieve success in learning because they felt doomed to failure by a sort of fate. Such individuals usually have experienced losses of important love objects earlier in life, and are obsessed with the thought that wishing and hoping for something good to happen predestines them not to obtain the thing wished for. The playwright Tennessee Williams wrote this about himself: "All my life I have been haunted by the obsession that to desire a thing or to love it intensely is to place yourself in a vulnerable position, to be a possible, if not a probable loser of what you most want." There are also children who can't learn because they distrust knowledge and dispensers of knowledge (teachers and parents). This stems from earlier nuclear problems of trust versus mistrust in child rearing practices when children have reportedly experienced untrustworthiness of adults.

One of the most common endogenous causes of poor learning in adolescence stems from the inability of the young person to permit his curiosity to be satisfied. There seems to be a self-inflicted, unconscious taboo on gratification of this kind. The inability to follow up one's curiosity and to gratify it in book learning or subject matter learning is displaced from the inability of that individual to satisfy his curiosity about forbidden subjects. Guilt, anxiety and thoughts of sinfulness around normal feelings about sex frequently lead to a repression of curiosity which is carried forward in a blanket-effect to smother curiosity and interest in learning about nonsexual matters. When the individual recognizes his conflict and permits himself gratification which was previously inhibited, often the block to learning is removed. In my experience, the taboo subject need not always be sexual. It may be concern about aggressivity. Learning is an aggressive activity, and the passive child may fear even such a sublimated expression of it!

EXOGENOUS FACTORS

Family relationships are never static, nor are they ever more dynamic than during the time of adolescent change. Not infrequently the charged feelings between parents and child are transferred to other adults, particularly school personnel. Interpersonal conflicts are displaced to the school, not only by children, but also frequently by par-

ents. As the adolescent tries to identify with teachers in a positive way, attempts to please them with his performance, as earlier he tried to please his parents, it is not unusual for parents to become rivalrous with and envious of the new parental-like figures, who frequently seem more able to cope with their children than they are. Such parents may put obstacles in the way of learning as when they belittle the efforts of teachers or when they overburden the child with outside activities, make him work at tasks which are socially acceptable and traditional, but which, added to a busy school schedule, may be overwhelming in demands physical, social and psychological. Such adolescents may not have the stamina or physical strength to cope with both the school and the extracurricular programs. This is an example of the exogenous or *environmental* influences which contribute to poor learning.

EXOGENOUS AND ENDOGENOUS RELATIONSHIPS

There are many other such factors outside the child's *own self* which may set off mechanisms *within* the *mind* of the child. Adults tempted by the readiness of children to become frightened are known to exploit, consciously or unconsciously, the vulnerabilities to anxiety in the teaching relationship. The competitive system of examinations, marking and threatening with poor grades or with poor recommendations for college entrance are typical examples. In this the secular educators have taken over methods from the theologians who through the ages are known to use the device of threats to teach children goodness of character and habits of behavior. Such adults in a sense are making the child pay for psychologic debts owed by others—other teachers or parents who were themselves victims of tensions which they could not or would not correct in themselves or in their environments. There is also the fear of examinations, which is not purposely induced by teachers, but is a natural concomitant of all testing situations and is more incapacitating for some students than for others. Examination anxiety can prevent learned knowledge from being used and often leads to school failure. The cause of this anxiety is really fear of disgracing the teachers and parents. The pupil fears that he will be shown up as incompetent and ignorant, the results of nondiligence. He fears that he will somehow be punished. Often this anxiety is a reactivation of early experiences when the child was humiliated for some inadequate performance. One high school pupil who did well in mathematics in classroom exercises and in homework, repeatedly failed his examinations in that subject. He was obsessed with the notion that he was obliged to fail in this way because a teacher in the fifth grade had predicted that he would never "amount to anything in mathematics."

It is often remarked that learning proceeds by a kind of contagion

from teacher to pupil, that interests and values of teachers spread to students. I believe this is what Van Doren had in mind; but like some physical diseases, the anxiety and hostility of teachers also spread like infections. In an age group such as adolescence in which emotional stability is easily upset, increased demands are made on the maturity of the teachers. When feelings are expressed in an explosive manner, when reason seems replaced by unreasonableness and when desires are demonstrated with undisguised severity, *a teacher will be challenged* by these manifestations of adolescent turmoil *in terms of his own life history*. Frequently in talking with a teacher who referred children for nonlearning, it became evident from the amount of feeling of annoyance, hostility, disappointment or resentment that what this adult showed was a response to some of his own unresolved conflicts.

Teachers, like all adults, must make compromises with their feelings in order to achieve emotional stability and social acceptance. Many teachers adjust well to the stresses and strains of life except on occasions when the adolescent student demonstrates his own lack of maturity and his struggle to become more adult-like through relating to the teacher. Such a teacher, confronted almost daily with such young persons, frequently responds to their behavior in terms of his own struggle of earlier years. This may lead to a teacher's greater sensitivity to and awareness of the problems of the adolescents in his group. For some of them he will have unusual understanding. But with others this same sensitivity may make him so selectively aware of his own problems, may so reactivate his old anxiety and so threaten him that by repression he becomes completely lacking in understanding of his adolescent students and their problems. This makes most teachers peculiarly sympathetic with certain students and unreasonably disturbed by others.

A teacher's reactions seldom lead him to suspect that he is demonstrating his own personality problems and his own human needs. The problem here is then more with the teacher than with the pupil. A school physician may cautiously and tactfully try to make such a teacher aware of his different investment of feeling toward different individuals, and in this may do him a good service. Like the adolescent who obtains insight about his conflicts, so also teachers and parents may with understanding be relieved of unconscious mechanisms which interfere with their interpersonal relationships and make their vocational lives particularly stressful and unpleasant. When this does not happen, a teacher may react so frequently with disappointment that he begins to lose the satisfaction which his work should give him, and he becomes convinced that he is a failure in his chosen profession.

The teacher's reaction to adolescent behavior is dependent on the maturity of his own adjustment to authority, to independence, to his

profession and to his psychologic needs. He must necessarily then evaluate *his own reactions* to those pupils who fail in his class. Such an evaluation is difficult and, like adolescence, may be carried to an extreme by the teacher who tends to be too self-analytic and prone to guilt. I believe the role of the school physician is to help the individual teacher, as well as the pupil, become aware of his own personality as it relates to the immediate situations of the classroom.

It is not necessary as a rule to probe the details of each person's history in order to guide the teacher or the student. Permitting teachers and pupils to talk about themselves and their difficulties and helping them deal realistically and practically with such things as arrangement of courses, placement in groups, assignment to certain tasks, modifying extracurricular activity programs, may be helpful in a meaningful way in starting adolescents and teachers on new patterns of interaction which lead to greater acceptance of each other, and finally to greater facility in learning. Even a psychiatrist dealing in depth with disturbed people is not unconcerned about the value and need of manipulating the environment when it seems timely and right to do so to help people in trouble.

Problems inherent in adolescent development are not always of the type which can be solved simply or readily by a classroom device or by an effort of reason and intellect alone. These problems are frequently the result of extensive and deep changes in the personality, or, as one writer has said, "Life has deep, tangled, furtive roots that reach down into a somber mystery." An approach to the understanding of these problems demands patience, insight and a perspective on the part of the physician and teacher which views development as extending over time and involving processes inside the individual, as well as between him and other persons who have particular significance to him in a feeling way. But this is not to say that adolescents with problems cannot be helped, and that prevention of grave difficulties may not be attempted by only changing an education system so it is more understanding of the needs of its pupils. The ideal educational system is one which is developed with the thought of helping *children* rather than with the single aim of indoctrinating them with subject matter. I believe such an educational system may prevent some problems of learning.

That not all learning problems are preventable is accounted for by the uniqueness of each adolescent and the particular ways in which he is able and permitted to cope with his adolescence not only in school, but also in the family. It is accounted for also by the uniqueness of each teacher, who like his pupil has his own particular personal history and residue of early life problems. The aim of a society should be not to try to develop an educational system which is foolproof in the sense of preventing all difficulties which the adolescent is heir to, but rather

to establish one which permits each adolescent the greatest opportunities for self-development as a human being, not only in a learning sense, but through a healthy reorganization of the adolescent personality.

The ideal educational experience helps the young person acquire experiences that bring a new orientation to the world, experiences which provide him with an opportunity to explore his new powers and differentiate them toward mature goals, so that he may pass through a reorganization of his emotional life which will make maturity of the adult years desirable, realistically attainable, creative and filled with healthy concern for society.

In these remarks I have stressed the long-term and often repetitious effects of early life experiences. I have cited some of the nonlearning problems of such cause-and-effect relationships. Many more could be mentioned, especially those which had concomitant physical symptoms such as pain.

The relationships of adolescent psychologic problems to earlier life experiences, particularly child rearing, are not easily demonstrated. However, the discerning and insightful pediatrician has many opportunities in caring for children over a span of years to perceive these relationships. Aware of them, he is in a better position than any other professional person to help people cope with their childhood problems and to ameliorate, if not actually prevent, many of the most painful ones which, if unchanged, will continue to plague the individual and those other persons, such as teachers, who have the responsibility of helping them learn and to live in a society.

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DISCUSSION

DR. JOHNSTON. There is a custom in Detroit of referring to a physician the child who is having trouble in school. In the adolescent group there will be a certain number who have exhausted their potential and are frustrated at their inability to go as far as their ambitious parents would wish. But there is a larger group in whom the potential may be

there, but is being obscured by a discordance between chronologic age and developmental or maturity level. In a room of 13-year-old girls, everyone will recognize at least 5 different developmental ages. We have planned our curriculum for the statistical mean. Attempts to adjust for differences at the level of junior high are being made, we think, much too late. I think that if we were a little more sophisticated, we might be starting youngsters off in the first few grades on a path that would be more suited to their anticipated development. We have had such a study under way for a few years and have no clear-cut answers yet, but I do think that enough knowledge exists to make school authorities less rigid than they now are on the question of the time of admission. Thus we feel fairly secure in pointing out that the average boy is about a year and a half behind the average girl in "readiness." As a result of this, we think that a high percentage of boys have their potential underestimated to the extent that they are dropped from school when all they might have needed was an additional year or two for maturing. Until we get more satisfactory criteria for admission to school, some estimate of growth and development should supplement chronologic age, and our first two or three years should go ungraded.

DR. SENN. I think that everybody shares your concern with their inability to judge readiness for school. But, again, I would say it is not the problem only of readiness for school, but is readiness for *what* school? Some children could start *some* school situations earlier and cope successfully with what they would have to deal with there. Others would fail miserably.

What I like is what for some time was used in the Milwaukee public school system, where the children were grouped in the first three grades. There was one group called the first three grades, not subdivided into first, second and third grades. The child had a chance to learn to read and write not by the end of the first grade, but by the end of the third grade.

I think the Hunter College faculty, which has for years run an experimental school dealing with gifted children, has placed in the criteria of giftedness early physical development, largeness of size, and early motor performance.

DR. NURNBERGER. I have just a few comments. We have heard a very interesting discussion of readiness for school. I would like to make a few statements about readiness to leave school, at the other end of adolescence.

I have the clinical impression shared by many of you that, perhaps, the early leaving of school in the sixteenth or seventeenth year may be correlated with what Erikson has called role diffusion, that is, incapa-

city to invest effectively in what is ordinarily expected as the role of the adolescent.

It does seem that we encounter many patients who had left school in this state at the sixteenth or seventeenth year of age, usually in the second or third year of high school. Many girls leave about the same time, to marry, and the boys to enter service.

I thought you might be interested in the high school enrollment status in Indiana. I am not familiar with national statistics, but we have done a preliminary study of the number of those aged 16 to 17 (a particularly vulnerable adolescent period) still enrolled in school in the 92 counties of this state.

On the basis of this study, which, unfortunately, depends on 1952 statistics, there are 18 counties in the state which we rank as the lowest for school enrollment. The range is from 23 to 63 per cent still in school, with a median trend around one of the two; that is, 50 per cent still in school.

At the other extreme, in the 18 counties with highest percentage, the range is from 83 to 93 per cent still in school. Thus approximately 9 of 10 are still in school in this group of counties.

Fifteen of the 18 counties ranked highest in school enrollment are in the northern half of the state; 16 of the 18 counties ranked lowest in the school enrollment are in the southern half, with a dividing line running through Marion County, which is in the center of the state.

We have a variety of correlations with school enrollment. One which might be of interest is that the incidence of committable mental disorders in the 18 counties ranked lowest in school enrollment is approximately the same as it is in the state as a whole or in various subclassifications on the basis of other social categories such as population mobility. The annual new-admission rate is about 0.85 per thousand.

In the 18 counties with the highest school enrollment, the annual admission rate is significantly lower, that is, 0.7 per thousand. This is a fairly stable phenomenon which we have observed over several years. It may possibly reflect the fact that an adolescent remaining in the socially accepted role invests more conventionally in his future and that he is a member of a family which supports him in maintaining that role. I just offer the statistics for whatever interest they may have. We are currently evaluating additional social and economic factors which may verify this matter.

DR. PSATHAS. I would like to comment that we seem to have overlooked one factor related to success in school, and that is social class.

Professor Hollingshead in his study at Elmtown in 1941 found that 80 per cent, or so, of the adolescents in the lowest social class who were still eligible to be in high school were not in school.

Davie, in a study in New Haven in 1950, or so, found the proportion a little lower, but still very high. In analyzing student enrollment in Indiana University by socio-economic background of parents, the lowest social classes are under-represented and the higher social classes are over-represented.

The reasons why students in the lower social classes drop out may be due, in part, to physical problems, but I would suspect a large part of this is also due to the different learning experiences they have had and to the different values placed on education that they acquire in their family and social world.

The support given by parents to education is quite important for developing the child's motivation to succeed in school. The possibility of succeeding in school is something which the middle-class child recognizes as being likely for himself. He has examples around him—his parents, his parents' friends and his peers who are planning to go on to college. His occupational aspirations also support education as a desirable activity.

In the lower social class we may find that the same support does not exist. If we break down attitudes toward further education by social class, the children from the lower social classes whom we might expect to have more favorable attitudes towards education because it is a means of achieving success, actually have the least favorable attitudes.

DR. SOLNIT. I would like to make a few comments about a study of ours in a pediatric clinic where we are attempting to define the ways in which a pediatrician can be of help to children with school learning problems. My remarks will be limited to a discussion of some aspects of this in adolescent patients.

In working with the adolescents in the pediatric clinic, we find that there are several sources of referral: the child or his parents may ask for an appointment because of some concern of physical health. Another source of referral, of course, is the guidance counselor or the teacher or the principal in the high school. Other agencies such as a social center may also suggest the referral. In our experience underachievement is the most common difficulty, although its presenting manifestation may be in disturbed behavior.

There may be a difference in the way the adolescent views coming to the pediatric clinic and the way he views coming to an individual private physician. The clinic has at times the advantage over the private physician of representing a powerful institution on whom the teenager can attach dependency needs. At times the private physician will have the advantage of greater privacy and of facilitating a stronger doctor-patient relationship.

The pediatric work-up proceeds along the lines of an assessment of

physical health, attempting to improve it, and to see in what way it may directly or indirectly relate to the school learning problem.

At the same time the pediatrician should become aware of all aspects of the patient's life, the home situation, the social situation, and the school learning situation. At an appropriate time, with the permission of the adolescent, he can establish a contact with the educator and other important figures in the community. The adolescent usually prefers to be in contact with such leaders in order to strengthen his interest in education and overcome some of his problems of studying and learning.

There may be an initial contact with the parent; subsequent contacts with the parent are arranged with the knowledge and acceptance of the individual adolescent patient.

At this point the pediatrician can become an important figure with whom the adolescent can identify. He has shown an interest not only in the physical health, but also in all aspects of the adolescent's environment and the people with whom he is interacting. At such time he is in a position, having established contact with the educational and social environment, to give the adolescent concrete evidence that he does understand and have knowledge of what is happening in this environment.

Through this relationship and through his knowledge of the resources of the community the pediatrician can successfully refer the patient for remedial education help. The pediatrician's continued, patient interest in the teenager after the referral can facilitate a heightened motivation by the adolescent to fill in the gaps in his learning. This may be sufficient, or, in addition, there may be the need for psychologic and social help. Often the use of community resources becomes important as a method of improving the teenager's self-esteem. Lowered self-esteem in adolescence may manifest itself in many ways, including the attitude that there is no point in studying, since failure is felt to be inevitable.

The pediatrician can help the teenager to establish contact with clubs and recreational centers. It is the sustained contact, then, with the teenager, providing him with a figure, the physician, with whom he can identify, that makes it possible, for example, for him to think it is all right to be aggressively successful in school and to avoid the invitation to be destructively aggressive in school. As one 15-year-old boy recently said, now he can keep out of trouble in school because, even though the teacher provoked him, he remembered he was going to see his doctor and could talk it over with him. He then explained that it doesn't make sense for him to make more trouble for himself when he already has so much.

The help of the pediatrician is often acceptable to the adolescent

who is having an underachievement problem. Also to be considered is the fact that this may become the basis for a successful, timely referral to a psychiatric facility, and that the pediatrician will, of course, use the psychologic instruments, such as a psychometric examination, to be able to reassure the adolescent, or to explain to the adolescent where his strengths and weaknesses lie.

DR. RICHMOND. I would like to take this opportunity of making a remark or two in relation to some of the comments that have been made this morning.

Since learning involves increasing pressures to deal with symbolic processes and abstract thinking, we need to look, as Dr. Senn suggested, at earlier developmental periods in order to try to identify why the child has been experiencing difficulty in these kinds of thought processes.

If we look back to some of the emphases in Dr. Noshpitz's paper, we find, perhaps, some of the origins of these difficulties, although we cannot always prove them directly. We are hopeful that data will become available which will give us more proof, that is, of the possibility that the overstimulation, the overgratification and, particularly, the overdeprivation are factors which have considerable impact on how children develop learning skills. Dr. Senn has not touched on this today, but I know that Dr. Provence, working at the Yale Child Study Center, which Dr. Senn directs, has been concerned with learning experiences and patterns in infants and young children who have experienced environmental deprivation over a considerable period of time. I think that from such studies we will have brought home to us much more clearly why environmental deprivation in early life may have the result of limiting the child's potentialities for more complex learning and conceptualization.

Thus social class, particularly lower economic class status, because it tends to be associated with some degree of early environmental deprivation, can possibly exert influences on learning potentialities which may not be reversed by improving their economic status or educational facilities later.

I think this does emphasize, too, the importance of what Dr. Johnston emphasized, and that is our knowing the individual child as a total organism. This, of course, is a unique function which the pediatrician brings to the clinical situation. For, if he is a specialist in anything, I suppose he is a specialist in individual differences. As he comes to understand individual differences and interprets what he learns about the patients to both school teachers and administrators as well as to parents, he is in a position to be particularly helpful.

I cannot but make one additional comment on the point Dr. Senn started out with, and that is the current attack upon the schools because

this attack is made in the guise of an emphasis of high intellectual standards and values. I say "in the guise" advisedly, because, it seems to me, this is basically an anti-intellectual stand, since it assumes that we have no significant knowledge to provide concerning human behavior. As our society has grown and as the study of human behavior has become more scientific, we do indeed have a good deal more information to impart to teachers.

What this stand, in effect, implies is that we want to deprive teachers of certain kinds of information, certain kinds of understanding about human development, and it seems to me this is as anti-intellectual as denying them an understanding of the content of the subject they teach.

DR. SENN. There is a lot of discussion these days about bringing the social scientist into working relationship with the medical personnel, with research persons and individuals who are engaged in service projects; but there continues to be raised the question: How will the social scientist do this? How will he fit into the medical scheme of things?

At New Haven the Department of Sociology has, more than any of the other social sciences, been interested in trying to arrive at some real, practical working arrangement with departments in the medical school. In pediatrics we have had a particularly interesting and fruitful relationship.

In the last five years there have been three sociologists, young men, working in the Department of Pediatrics, making various surveys, on such subjects as the degree of cooperation one may be able to achieve with certain social groups when the diagnosis of rheumatic fever has been made.

One of the sociologists has made a study of pediatric education; another of service on in-patient pediatric wards in terms of what is happening there, types of patients admitted, variety of problems, and so on. We derived great benefit from the research data that the social scientists have collected.

Behind this attempt to promote a closer working relationship between sociology and pediatrics and the other departments in the school of medicine has been Dr. Hollingshead, who is the new chairman of the Department of Sociology. I think we might benefit from hearing from him many things about this experiment in professional interrelationships, but I am afraid we will have to learn about these things from him in the coffee break and at other times, because he is scheduled to talk about "Sociology of Adolescence." I am pleased to introduce Dr. August Hollingshead, who became interested in adolescence a long time ago and has written a book, *Elmtown's Youth*.

A SOCIOLOGIC PERSPECTIVE ON ADOLESCENCE

AUGUST B. HOLLINGSHEAD, PH. D.

The topic assigned to me is too broad to cover in the time allocated to it. Therefore I shall limit my paper to four major points. First, I will make a brief statement of my viewpoint toward adolescence. Second, I will present some elementary social science principles pertinent to the topic. Third, I will call your attention to some emotional and social problems associated with peer-group relations during the adolescent years. Fourth, I will point out some intergenerational problems that are critical in this phase of the life cycle.

A DEFINITION OF ADOLESCENCE

From the viewpoint of the sociologist, *adolescence is the period in the life of a person when the society in which he functions ceases to regard him (male or female) as a child and does not accord to him full adult status, roles and functions.* In terms of behavior, adolescence is defined by the social roles a young person is expected to play, is allowed to play, is forced to play, or prohibited from playing, because of his status in society. It is not marked by a specific point in physiologic development such as puberty, since its form, content, duration and period in the life cycle are differently determined by various cultures and societies. Sociologically, the important thing about the adolescent years is the way the maturing individual is regarded by his society. The menarche, development of the breasts and other secondary manifestations of physical adolescence in the female, and the less obvious physical changes in the male connected with sex maturation, such as rapid growth, voice changes, the appearance of labial, axillary, and pubic

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hair, derive their significance for the sociologist from the way they are regarded by the society in which the adolescent lives.

The phrase "adolescent behavior," as we use it, refers to the social action patterns of young people. We believe that adolescent behavior is a type of transitional behavior which is dependent, in part, upon the society, more particularly upon the position the individual occupies in the social structure and, in part, upon biopsychologic phenomena. This is not to assert that anatomic, physiologic and psychologic facts, connected with this phase of the life cycle, have less influence on behavior than the social system. The sociologist merely takes the position that their functional importance for the maturing individual is defined by the culture in which he lives.

Before proceeding further it may be well to state what the sociologist means by the terms "culture" and "social system." *Culture* is what human individuals as members of a society learn, share and transmit. Individuals in social situations are sharers, bearers and creators of culture. In this sense individuals and culture are inextricably interwoven into the matrix of a society's social system.

The concept of *social system* is more inclusive than that of culture. A social system is composed of the organized interactions which relate one individual to another, individuals to groups, individuals and groups to institutions, and institutions to other institutions. Organized relations which tie persons together are expressed in the social roles individuals perform in society. The web of social relations and the conjoint role activities of persons enables a society to maintain itself. A society is more than its constituent part—individuals, culture and social system.

THREE ELEMENTARY SOCIOLOGIC PRINCIPLES

Interrelations between persons, culture and social system may be described by calling attention to three elementary sociologic principles pertinent to this discussion. These principles may be stated categorically as follows: First, individuals learn how to behave socially by direct personal association with other individuals who have been enculturated in a social system. Second, the content of what individuals learn is provided by a particular society's culture. Third, the ways an individual participates in the social system determine, in large part, what is learned. I will discuss briefly each principle, in turn, and give an illustration of it.

The first principle, to repeat, states that *social behavior is learned by individuals in association with other members of their society.* The sociologist relies upon this principle to explain uniformities in the everyday behavior of persons. These may be illustrated by the use of

language; or by common understandings of how males, as well as females, should dress, talk, and act in specific roles.

The second principle emerges from the first. It states that *the content of what the individual learns is provided by his society's culture.* This principle may be illustrated by reference to the requirements every professional person has to meet before he can become a member of his profession. Physicians, for example, are licensed by the state in which they practice. Before they can be licensed as doctors they are required by law, as the instrumentality through which the society exerts its power over what physicians should be taught, to complete a stipulated curriculum. The rationale behind the licensing law is the idea that physicians should be trained in specific subjects that the society, working within the institution of organized medicine, considers indispensable for medical practitioners to have learned. Now, this is my point: what is learned, by physicians-to-be, is provided by the specialized culture of the society in which a medical student's training is taken. Students learn the required essentials to be licensed as medical doctors by participation in specialized aspects of the society's culture. Thus principles one and two are brought to bear simultaneously.

The third principle is implied in the second. It is also necessary, if we are to understand differences as well as uniformities in social behavior. This principle states that *what the individual learns is shaped by his participation in a social system.* The learning of a foreign language or algebra is a cogent illustration of this principle. To understand the learning process, as it is related to the development of social behavior, we must study an individual's participation in his society and discover the sociocultural influences that have been brought to bear on him throughout his life.

Reflection upon these three principles indicates that if we are to understand social behaviors in all their ramifications, we need to determine the consistencies and inconsistencies which exist in a particular social system. To do this the sociologist analyzes a society's culture and studies carefully the way an individual participates in the sociocultural matrix around him. This is particularly important, because it is through the participation process that individuals learn what they may, may not, can or cannot do within their society. What individuals learn by participating in some aspects of a society's culture may be prohibited by other aspects of it. Thus some rules that are designed to control the social behavior of persons and groups may be juxtaposed to other rules. In this sense, society provides the person with the essential elements of conflict.

Adolescents are particularly vulnerable to conflicts in the sociocultural matrix which surrounds them in our society. The adolescent is no longer a child, but he has not reached adult social, legal or economic

status. As a quasi-child, yet simultaneously a quasi-adult, he is faced with many dilemmas. He must act and react to adults, other adolescents, and to the many social situations in which he finds himself.

Adolescents, as well as adults, often find themselves in the position of an industrialist who made a fortune in recent years. To bolster his self-esteem he set out upon a lion hunt in East Africa. While hunting alone one afternoon, he flushed two lions at the same time. He took careful aim and killed the older lion before it had time to charge. The second one, a young male, charged. As the lion jumped, the hunter fired, but he missed. Fortunately for the hunter, the lion miscalculated; he had jumped too far. While the lion recovered, the hunter scrambled to safety. Back in camp, his companions told him, "Brother, you'd better practice your markmanship, or you're going to get killed!" For the next two weeks he practiced and became quite good with his rifle. Feeling ready to go back after his lion, he returned to the place where he had flushed the two lions. He looked around for the young lion, and, sure enough, up on a slight rise, there was the lion—practicing short jumps!

Like the hunter and the hunted, adults and adolescents often fail to see the other party's interest in the social situation in which they are involved. This, perhaps, is the crux of the often-discussed "adolescent problem." From the viewpoint of adolescents, the question is: "Why are adults so stupid?" From the viewpoint of adults: "Why do these young people do such crazy things?"

SOME EMOTIONAL PROBLEMS

Young persons can sympathize with the anguished cry of Sir Walter Raleigh, "Fain would I climb, but fear I would fall," for adolescence is a time of hope and fear, of dreams of success, and tortures of failure. Caught in crosscurrents of anticipation and insecurity, the adolescent searches for a solution to the dilemma of his developing emotional needs and the demands society makes upon him.

By mid-adolescence a young person is on the threshold of a predicament: He must withdraw from his parents in the interest of becoming an independent individual, but he must remain within the family and continue to receive its support. When this time comes, he shrinks from intruding on the feelings of his parents, and he rightly feels they must not pry into his inner life. Thus his deeper personal problems are seldom shared with his parents. Moreover, he receives little support because our society teaches us to hide our anxieties, especially our fears, for to fear is to be weak, and the weakling is not a hero. Adolescent worries do come out at home, but they are not necessarily the ones that bother adolescents—or their parents—most. Parents may hear anxiety expressed about their children not passing courses at school, or not making the team, or getting in the cast of a school play. It is socially acceptable to express these kinds of anxiety.

An adolescent's real anxieties are behind his back, and he may fear that they are going to grab him. They may take the form of a suspi-

cion that he is being snubbed by boys with whom he would like to associate. Although some worries of this kind creep into the lives of most teenagers, with others they become a real problem. For example, Tom believes his age mates are "leaving him out" of their clique activities. Tom is a shy lad of 16, who is worried sorely because his classmates have ignored him in recent months. When he entered high school, he was asked to join some group activities, but his fears and his family got in his way. He thought he had real reasons for not going to a school dance in his sophomore year, and not going skating with a mixed group on another occasion. The fact is Tom cannot dance, and his skating is poor. Today his classmates do not deliberately leave him out, or dislike him; they merely overlook him.

Tom's feelings of insecurity are traceable, in large part, to a family situation beyond his control. What makes his case so difficult is that his parents do not know his problem, or theirs. Tom is a victim of his mother's anxieties. She wants him to succeed, but she is making him fail.

How, you may ask? In the first place, Tom can never do anything well enough to suit his mother. In the second place, he must not "overexert" himself or he will "damage his heart." (His maternal grandfather died from a coronary at 47.) His mother gives him few chances to go places and to do things on his own. He goes with the family; actually, this means the mother, the father and his sisters.

Hidden anxieties such as Tom's are common among adolescents, but are seldom noticed by adults. This is unfortunate, for excessive shyness is just as troublesome to a child as the kinds of emotions that impel a boy or girl to do unreasonable things. Worry that one will not be able to make good, as well as the anxiety that comes from being unloved and misunderstood, can break out in stealing or lying, or generally ungovernable behavior. It's as if such an adolescent said, "All right! I'll show them I don't care!" The bravado acts that result bring the youth into conflict at home, at school or with the law.

THE PEER PROBLEM

Although many adolescents are full of anxieties about their personal appearance and their progress at school, their number *one* problem is to be accepted by their age mates. In the childhood years two or three friends often chum together, but, in adolescence, to be a member of a special set becomes extremely important. This is especially observable among girls; girls are more concerned with the details of social life, such as manners and clothes, than boys. However, whether an adolescent gets into the set to which he aspires is dictated by a good many things other than his own desire. The boy or girl has to dress according

to the group's standards; he or she has to do the things others do. This means that cliques form with close reference to the social and economic status of their members' families.

There is snobbishness involved in cliques; but the need to be safely inside protecting walls is so common at all ages that the adolescent can scarcely be blamed for wanting the backing of his peers. Younger children have the home to back them up. But the teenager, though not ready for complete independence, is often impatient of the kind of support his family gives. He needs to have the support of his intimates. His criterion of success is acceptance by his pals.

The heartaches among adolescents who long to be but are not accepted in cliques they admire and emulate are always touching and sometimes pitiful. To be included in a clique gives one a distinction not attached to most groups formed around school activities. To be a member of the band or the debating society often is less rewarding to an adolescent than to be singled out as socially acceptable by being included in a particular clique or "bunch." There are cliques of varying degrees of prestige, and to be accepted in a second- or third-best set is better than to stand alone on the outside. Failure to be accepted in a definite group may have long-lasting effects on personality; it may undermine an adolescent's estimate of himself as a person.

A clique may be crystalized into a self-perpetuating fraternity, sorority or secret society. Socially, membership in a high school fraternity or sorority proves to the school world that a boy or girl has enough prestige to be chosen by the organization; but the popularity of the chosen individuals may be short-lived. Nevertheless, to the teenager, who is so intent on feeling secure in the world of his age mates, the thing that has most meaning is membership in a particular group.

The anxiety adolescents express in social situations is related closely to family background. Many parents are not aware that what a teenager selects out of his social environment as meaningful to him depends in large part on what his upbringing has been. The values he has learned in his family permeate his feelings, and his values, in turn, enter into whom he seeks as companions. When a family has a wholesome social life of many kinds, the adolescent does not think he has to dust off his company manners for visitors. When friends of all ages have been in and out of a house frequently, there is little chance of teenagers developing social awkwardness. If an adolescent's home is one where he can take his problems, where he feels secure, he is less likely to fall into the unhappy situation of becoming friendless and isolated from his age mates. A home to be proud of does not mean to an adolescent broad lawns, large rooms and fine furniture, but a place where he feels comfortable in his surroundings and with his family, a place where he is glad to bring his friends.

A crucial question is: What happens when an adolescent feels cut off from the support and comfort of his age mates, as well as his family? The time is then ripe for him to act out his frustration in behavior that takes him still further from his goal, namely, to "be somebody" in his own right. A frustrated, rejected youth may join with others who also feel unwanted and find an outlet for troubled emotions in savagely delinquent acts. Or he may retire within himself, crushed, and cynically pretend that he does not care. To seek either refuge means that the maturation process is side-tracked. In our society, which delays so long the time when youths are accepted into adult society, it is important to recognize the adolescent's need for acceptance by others who are going through the same biologic, social and emotional phases of growth.

Before I turn from consideration of peer-group problems, during the adolescent years, I would like to point out that the social and emotional problems mentioned above are not as obvious to parents, to teachers or to adolescents as a Divinity School student's description of the neck line of Marilyn Monroe's blouse was to his fellow students. He reported it had a biblical cut: "low and behold." On the contrary, the interpersonal problems of adolescents are usually subtle; often they are hidden deep in the personality structures of the adolescent and of his parents.

INTERGENERATIONAL PROBLEMS IN ADOLESCENCE

This leads me to a discussion of adult-adolescent relations. Here the major problem revolves around the need of the adolescent, in our society, to gain independence from parental domination. Many parents do not recognize this problem, for they do not want their teen-age children to make decisions. Thus they cannot support the child's desire to become an independent person, secure in his own right. Many parents do not realize that when their emotional needs run counter to those of a child, trouble is going to result for both. Nevertheless an adolescent requires guidance in his efforts to reach self-reliant adult status in his own eyes and in the eyes of his peers. Parents are in the best position in our social system to furnish such guidance.

The crux of adult status is to play adult occupational roles, and to have a mate. There is wide variation in our society in the age when a young person may fulfill these roles. On the whole, the lower the socio-economic level of the parents, the earlier in life these roles are filled with social approval.

Although the need for parental approval in the occupational area is strong in both boys and girls, the form it takes varies with the different roles our society expects of the two sexes. Girls need their mothers' assistance to help them understand the roles they are expected to play as adults. Mothers who have gained some understanding of the plight

many women find themselves in today, when women's occupational responsibilities are no longer clearly defined, can do a great deal toward helping their daughters not to mistake career glamour for happiness, and a house for a home.

Sometimes girls protest the unfair advantages men have over women in our society. This may be a cover-up for failure to see satisfactions in the feminine role they are expected to play. If an older girl carries her hankering to be a boy to the extent of insisting on boys' types of clothing and contempt for the kinds of adornment most girls like, her behavior can work mischief with the normal adjustment to the opposite sex that should come during adolescence. In such a case it is worth inquiring into why her feelings about becoming a woman have gone astray. Perhaps her mother is unhappy because of a poor marriage relationship, is overburdened with child bearing, or has turned into a despairing family drudge. Even though her mother may not express her feelings, observation of any one of these situations is enough to turn a girl against a similar future. It may be that her father wanted a son and has tried to make her into an acceptable substitute. In order to live up to his desire for comradeship with her, she may have tried to please him to such an extent that she has cast aside many of her normal interests.

Boys, too, have problems fitting into their traditional roles as males. Not only do they want to achieve great things, but also they early become aware that much is expected of them. Some worry a good deal over how they are going to "make good." The more secure a boy is in his relationship with his father, the readier he is to accept the responsibility of manhood. In the absence of a father, or of an understanding father, teen-age boys have a great need of other men they can admire. Teachers, counselors, the men for whom they work, heroes they read about, all exert more influence on them than they realize. A normal adolescent boy looks to a hero figure he admires.

When the interests of a boy, rather than his looks or his build, are responsible for deviations in his behavior from what is commonly expected of boys in a particular status group, tensions may be severe. If his interests include activities that are thought of as on the feminine side, a boy may be considered a "sissy." For example, Francis, who turned his radio on Saturday afternoons to the Metropolitan Opera, lived in dread of his friends finding out. In some circles this would have been considered cultural, but in the neighborhood where Francis lived interest in grand opera was jeered by the boys. This boy has learned to appreciate grand opera. He has been exposed to it on records and the radio since he was a small boy. His mother gave up a dream of an operatic career to marry. Francis may be said to be the product of a fond mother's hope for a son with musical tastes. Thus a problem may be building up for Francis and his mother, a problem that began before Francis was born.

HETEROSEXUAL RELATIONS

The development of wholesome attitudes toward heterosexual relations during the teen-age years is crucial to the maturation of both young women and young men. Before adolescence, the really strong and deep love relationship is to parents. If relations between parent and child have satisfied the child's emotional needs, the adolescent is in a good position to make the transition to a love relationship with the opposite sex.

A girl and a boy love their father and their mother in different ways, responding to the things in them that are characteristic of men and women. Most children have a closer relationship with their mothers than with their fathers. This first strong attachment to someone of their own sex may be one explanation for the inability of some women to break away from this one-sex love to the heterosexual love involved in marriage. It may be related, also, to the fact that large numbers of women who do marry want to live near their mothers and depend on them, almost more than they do on their husbands.

The boy's dependence on his mother in infancy means that he starts out by having a close attachment to someone of the opposite sex. This may be a help to him when he reaches the time to make a transition to an interest in girls. But it may also be a hindrance, especially if his mother has, without knowing it, taken advantage of the affection he feels for her and encouraged him to hold so fast to her that he finds it hard to let go.

There is a period between a boy's early childhood and adolescence when his father is of great importance to him. In order to establish the manliness that a boy seeks, he turns to his father as his object of admiration and gains immeasurably if his father is able to give him strong backing. The maleness of his father's interests offers him a chance to get free of the constant and overpowering association with women which characterizes our society. To digress for a moment, have you ever stopped to count the hours that boys spend in close companionship with, or under the supervision of, their mothers and women teachers, from infancy through adolescence, compared to the smaller number of hours usually spent with their fathers and other men? During these years, mothers and teachers tend to harp repeatedly upon such things as neatness, cleanliness, manners and other matters distasteful to small boys. Perhaps this explains some of men's hostility toward women observable in adult life in American society.

The exaggerated disdain of boys for girls, often spoken about as though it were a definite characteristic of the preadolescent period, may be a protective device, grown out of our way of life, to strengthen boys' solidarity and he-manness. At the same time it may serve as a protest against a home and school environment shaped by feminine tastes.

But to return to my theme. Girls, likewise, need to have close relationships with their fathers. While they are building an image of the man they would like to marry—and girls in their teens begin to measure the boys they meet against an ideal mate—they are depending greatly on the father or father-figure in their lives, such as an uncle, to fill in that picture.

Girls are likely to be, in one sense, their father's favorites. There need be no jealousy in a man toward his daughters, but often there is a fairly sizable amount of it in relationships between fathers and sons. But there may be a pitfall in this fondness of fathers for daughters. In his unconscious anxiety over a young man taking her away from him, a father may ridicule the boys she dates. This can make her more critical of men than is healthy.

The adolescent generally approaches heterosexual maturity by indirection. A concomitant of this is that many girls project their romantic yearnings on men they see, but never meet. The passionate and mass devotion of bobby-soxers to a current movie star or TV crooner is an expression of this aspect of teen-age feminine love life. This is an age when almost any male figure, if personable enough, whether a clerk in the neighborhood drugstore, a tenor in the church choir, or a high-school teacher, may be the object of romantic devotion. In Elmtown a pudgy girl, whom the boys ignored around the high school, exerted herself every evening for months to reach the bus early enough to get the seat behind the driver. She tried to talk to him, but with little success, and so discharged her feelings by gazing at the back of his bald head.

Boys, of course, go through the same phase. Although they may be less whole-souled in their preoccupation with romantic love than girls, their talk among themselves is as much of girls as of sports. But, "girl-crazy" as most boys are, at one time or another, they share their love for their "dream girl" with their occupational dreams. Love and marriage are not the be-all and end-all to boys that they are to most girls at this stage of heterosexual development. A young man has two passions: sex and success. I suspect the former is stronger in the adolescent years, but our society emphasizes the latter.

The impulses arising in connection with sex are managed usually according to the patterns of social behavior that have been built into a boy or girl in previous years. By the process of interpersonal participation in social life each learns the attitudes of the groups with which he associates. If an adolescent's associations in the home, his play groups and at school have taught him the values that helped him handle other strong emotions, the chances are that he will be able to cope with his sexual desires in a socially acceptable way. Adolescents who get into trouble with sex are likely to be so unhappy and insecure that they seek

the reassurance of being needed physically by someone, or their behavior is a blundering attempt to make up for frustration in other areas of life. An adolescent does not observe in vain the affectional behavior of his parents, and others with whom he has been in close association. If he has seen his father and mother deferring to each other's wishes, and sometimes sacrificing their own wishes in favor of others' desires, then it is likely that he will think of these ways as proper and will follow them in his relations with others.

CONCLUSION

In closing, I want to emphasize that the emotional problems of the maturing boy or girl are worked out, for the most part, on the proving ground of the teen-age years. Unfortunately, parents cannot, in the present state of our knowledge, prevent or wholly do away with the psychic wounds left by experiences their children pass through. But they can be enormously helpful if they provide the best social climate they know how, and give an example of facing up to life. The family, if it has done its job well, has prepared the adolescent for intimacy with others. Parents who see their boys' and girls' personalities showing the warmth and spontaneity that help to ensure their finding friends may expect them eventually to form lasting love relationships. These parents do not need to be anxious about the problems of adolescence.

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DISCUSSION

DR. PSATHAS. I would like to extend, if I may, some of the remarks made by Dr. Hollingshead. Since society has become so complex, much training is required to maintain the occupational specialization that we have. The period required for learning one's culture, therefore, is prolonged, and a longer time must be spent in a dependent state. American society has created considerable abundance, so that we can afford to keep the adolescent unproductive. We do not need him in the labor

force. In fact, there have been proposals to keep him out of the labor force even longer because there is just no room for him. We cannot absorb him. Concomitant with this is a decline in the proportion of positions in the labor force of unskilled and semiskilled occupations, and an increase in those occupations requiring more skills.

There is much free time, and unproductive time at that, during this period between childhood and full adulthood. In this period an absence of norms or a condition of anomia may exist; thus the adolescent does not know what is expected of him.

In a study of adolescents and their families which I conducted I found that lower-class parents seemed to be more permissive in their handling of the adolescent, relinquishing controls sooner than the middle-class parent does. The middle-class parents seemed to include the adolescent in family judgments and family decisions and train him for responsibility, I think, a little more adequately than the lower-class family does.

The absence of norms and of any explicit steps that are recognized by all parents and families in our society as to how the adolescent is to go through this transitional period complicates the problem for the individual considerably, especially since these unproductive years have been lengthening in their span.

The sex roles which Dr. Hollingshead referred to I think are quite important. These social roles that are associated with being a male or a female in our society are another source of strain or problem for the adolescent. We expect that a male will be competitive, striving, success-oriented, and more aggressive in his behavior than a female. Females are permitted to be more emotional than males, males more active physically, females more nurturant than males, and so forth.

What we refer to as sex roles differ; in other words, our behavioral expectations for males and females differ. The female may be at an advantage in our culture, in that the opportunities to learn her role are somewhat greater, since her mother is the major source for this.

The male, however, because his father leaves for work in the morning and comes home at night, has fewer opportunities to observe how males behave, particularly in the occupational sphere. The stress, then, is on competitive, striving kinds of activity or success for the male, while at the same time no avenues are open for him to achieve such success; that is, he cannot enter the adult world and achieve success in terms of occupation until later. In the meantime he is still confronted with the ideal, the dream, the success theme, and, in addition, he wants to assert his maleness. This may lead him into peer-group activity and may make such activity important for him. Therefore he may be expected to engage in activities sanctioned by his peers, activities which give him the status and the recognition that he wants. If he excels in

these activities, this is a kind of success. The activity may actually be delinquent, but the group supports him in this, and he achieves success in the sense of being recognized.

Professor Albert Cohen, a sociologist at Indiana University, in a major contribution to the sociology of adolescence and delinquency, has suggested in a book entitled *Delinquent Boys* that subcultural delinquency, that occurring in peer groups, may arise for different reasons in the middle and lower classes. The lower-class individual confronted with the success theme in our culture, desiring success, but at the same time finding that the avenues to success are closed or pretty restricted for him, may turn to destructive delinquent activities as a way of symbolizing his aggression against the middle-class value system of our society.

This is an interesting idea. He may engage in theft and destruction of property because these are the very things that middle-class individuals and groups in our society hold to be almost sacred. Acts of daring and exploitation may be a way of giving vent to his aggression against the middle-class system, whose values he accepts, but within which he is unable to achieve success.

On the other hand, the middle-class delinquent, Cohen suggests, may be reacting to the anxieties that develop in making a sex-role identification; that is, in asserting his maleness. The middle-class individual, by being exposed more to his mother than to his father—his father being away, out of the home, and so on—and having fewer opportunities to learn the male role, and having, therefore, more anxieties about whether he is a male or will be an adequate male, may engage in delinquent activities as a way of asserting his maleness, as a way of proving to himself, as well as to others, that he really is a boy, that he can be just as strong and aggressive and competitive as anyone else.

DR. LITTLE. I just want to ask a question. Not only does the male child find it difficult to know what adult male behavior is like if the father is out of the home—is there something, too, in the fact that the father's role has changed?

DR. HOLLINGSHEAD. I think there is something to be said for that point of view, but we also have to realize that the role of the woman in our society is changing. There are many problems associated with the changing sex role of women which creates problems for females as well as for males. For example, the little girl who is trained for a certain function in a home; later she is expected to go on the production line of a factory, be a clerk in an office; still later she is expected to be a homemaker, mother, housewife. This confusion in the culture leads, perhaps, to ambiguity in role identification and problems for the maturing youngster.

DR. RICHMOND. I would just like to raise a question for Dr. Hollingshead. I think there has been the implication in some of the discussion, at least, that we are prolonging adolescence and the period of dependency of our youngsters. Although this may be true in some ways, I think that our youngsters are not running true to form in this connection. If we take the lowering age at the time of marriage and the lowered childbearing age as an example, this is not necessarily true. Many parents today are perturbed about the fact that their children are marrying and assuming family responsibilities at a time when they really have not yet emerged from adolescence. Certainly, economic opportunities of various kinds, including the G.I. Bill, have made it possible for youngsters to do this.

It does raise the question, too, of what happens to adolescents who themselves are parents, because, as we have encountered many of our young mothers and fathers in our clinical settings, it is pretty obvious to us that they, indeed, are in a period of adolescence and have much growing up to do.

I just wonder if you would comment on some of this problem we are encountering clinically. We are not fully aware, really, of how the sociologists view these trends.

DR. HOLLINGSHEAD. In answer to Dr. Richmond's first point, it was Dr. Psathas who emphasized the lengthening adolescence, and not Hollingshead.

DR. RICHMOND. I said, "in the discussion."

DR. HOLLINGSHEAD. I think, certainly, in the job area we are doing this. We are raising the school-leaving age. In the last half century it has been raised at least two years and, in some states, four years.

Then, both the craft unions and the industrial unions put floors under the age when a person can become an apprentice or a member of the union. This is producing a period of three, four or five years between the time when the youngster is able to do a job and when he is allowed by society to do the job.

You are certainly right about the trend of marriage being toward younger ages. The age of marriage has been going down in the United States since, roughly, 1890. During this period we have, particularly since the outbreak of World War I, cut down on immigration to this country. Many of the immigrants who came in the previous period were single. They worked two, three, four, five, six years before they married or sent back to Europe for a bride.

A considerable number of young people are mating with or without legal sanctions. In many clinics and urban centers this is the kind of

person encountered. The young person has taken on an adult sex role, and pregnancy has resulted; possibly it has resulted in marriage. A series of emotional, economic and family problems follows. We see only one aspect of this in the clinic.

In the New Haven community, from 1948 through 1950, over 7000 couples were married. We found that 40 per cent of the girls, in the lowest socio-economic class, were pregnant at the time of marriage. Dr. Dougald Beard and his research unit in obstetrical medicine in Aberdeen also found that around 40 per cent of the girls in class V were pregnant at the time of marriage.

The age of marriage is significantly lower among females, as well as males, in this age group than in the higher socio-economic groups.

Social position, as well as role sanction at a particular social level, has to be taken into consideration when one discusses these things.

DR. SOLNIT. Would you comment on the idea that the type of education the physician receives makes it difficult for him to understand and communicate with adolescent patients.

DR. HOLLINGSHEAD. It all depends on the social class of his patients and the social class from which the physician came. Dr. Solnit, have you read Chapter 5 of *Social Class and Mental Illness*? There is an answer there for the psychiatrist.

DR. SOLNIT. I was thinking of the pediatrician, for whom the problem is differently framed for the adolescent patient.

DR. HOLLINGSHEAD. Here again it will depend upon the social background of the pediatrician and the social composition of his patients.

I hope Dr. Gray does not throw an ashtray at me. During the coffee break he was concerned with juvenile delinqency. Some of the speakers had indicated there is a considerable amount in our society. He did not think there was as much as this morning's speakers indicated because, as he put it, he did not see this in the adolescents he treats. I would not expect this amount of delinquency in the patient load he is treating.

Again, do not throw that ashtray, Dr. Gray. Yesterday afternoon, when Dr. Gray was talking, I was struck by the, perhaps, unconscious social identifications that he was making of his neighbors and of his patients, all high-status people. I did not hear him make a single identification that indicated any of his patients came from lower-status groups.

DR. GRAY. They don't.

MENTAL RETARDATION IN ADOLESCENCE

Factors in Causation and Recognition

STERLING D. GARRARD, M.D.

And there are others, I believe, who serve us, who have strength enough for the labors of bodily work, but nothing particular in their minds which makes them worthy to be partners. These sell the use of their strength for a price which they call wages, and therefore, no doubt, they are called wage-earners.—Plato: *Republic*, Book II.[15]

The peak incidence of mental retardation occurs during adolescence. Many patients are first identified at the beginning of this period, and many leave the category by its end. Unfortunately, there is little specific information to define the causes of this prevalence during adolescence, which reflects the primitive state of knowledge at the present time in the field of mental retardation. The following discussion, therefore, descriptively and somewhat tentatively, considers the causes and manifestations of mental retardation during adolescence.

DEFINITION

No wholly satisfactory definition of mental retardation exists. The following definition of the American Association on Mental Deficiency[21] is offered, however, to clarify, to some extent, the nature of the group with which this discussion is concerned:

Mental retardation refers to that group of conditions which is characterized by: 1) inadequate social adjustment; 2) reduced learning capacity; 3) slow rate of maturation; present singly or in combination, due to a degree of intellectual functioning which is below the average range . . .

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Benoit[1] supplies the following definition, in addition, which contributes further to an understanding of retardation:

> Mental retardation may be viewed as a deficit of intellectual function resulting from varied intrapersonal and/or extrapersonal determinants, but having as a common proximate cause a diminished efficiency of the nervous system . . . thus entailing a lessened general capacity for growth in perceptual and conceptual integration and consequently in environmental adjustment.

Mental retardation is not a specific etiologic entity, but rather a heterogeneous grouping of conditions. Recognition is possible only in relation to the demands of specific social or cultural settings, and ultimately the diagnosis of retardation is usually a social rather than a biologic one. This creates particular difficulties for the physician, because the medical setting is only one of several in which primary recognition may occur, and in many instances the techniques of medical evaluation do not permit recognition. Furthermore, the category of retardation is unstable, and individuals move into or out of it as the life situation changes.

INCIDENCE

A survey of incidence was conducted by the New York State Department of Mental Hygiene in Onondaga County, New York, in 1953.[22]

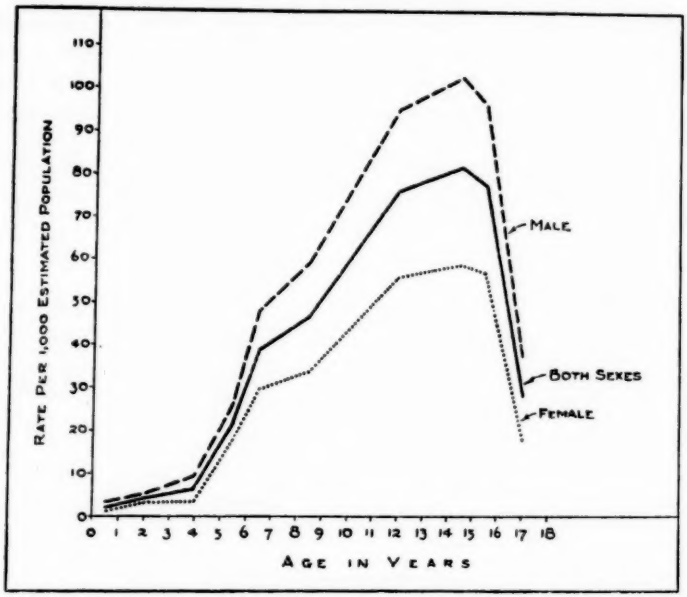

Fig. 11. Age incidence of mental retardation in Onondaga County, New York, in 1953.[22]

Figure 11 indicates the incidence, determined in this survey, of socially recognized mental retardation in children under age 18 years. Problems of definition and census-taking interfere with such determinations of age incidence, but all similar studies reveal a peak frequency during the pubescent and adolescent years.

The over-all prevalence rate of retardation in the Onondaga County study was 35.2 per 1000 estimated population under age 18 years. It will be noted from Figure 11 that the incidence is low during early childhood. It begins to rise abruptly at 5 years to 22 per 1000 population, with the entry of the school system as an agency of recognition. The rate almost doubles by 6 years of age, and in the 10- to 15-year age span it reaches a maximum of 80 per 1000. Thereafter a striking decline occurs, by approximately 15 or 16 years of age, to 28 per 1000 population.

The degree of severity of retardation undoubtedly influences the age incidence. Children seen at adolescence for evaluation tend to be grouped into the following categories: (1) those who have been continuously recognized as mentally retarded from early life; this group represents the severely handicapped children who often present evidence of gross neurologic disease; (2) those who have been identified first in the early school years; (3) those who have been recognized first during the pubescent or adolescent period. Children in the latter two categories, in general, represent relatively mild forms of retardation and may no longer be identifiable after the school system has ceased to be a factor in recognition. At present there are no valid data to indicate the exact sources or reasons for the rise and decline in incidence of retardation during the ages 10 to 15 years. It is probable that factors associated with pubescence and adolescence, however, play a significant role in the heightened social sensitivity to retardation during this period.

MULTIPLE CAUSATION

Factors which affect the severity of mental retardation may arise from three areas. In general, adverse influences originate either in the individual's internal environment, in his external environment, or in the interaction of each. Defects of the central nervous system may be primarily responsible for mental retardation, but severity is also significantly influenced by associated psychologic and sociologic factors. Psychologic and sociologic factors, in addition, are significant primary causes of mentally retarded behavior.

Figure 12 illustrates this concept of multiple causation. It is an adaptation of a visual aid for teaching total health devised by Richmond and Lustman.[18] In it the outer circle represents the continuous interaction between influences in the biologic, psychologic and sociologic

phases of an individual's environment. As shown by the arrows between the components, disturbances in one area tend to affect the remaining areas and produce a compounding of effect. No attempt is made in the diagram to be exhaustive in the listing of causative factors. These are provided for illustrative purposes only, and specific influences are not all discussed individually in this paper.

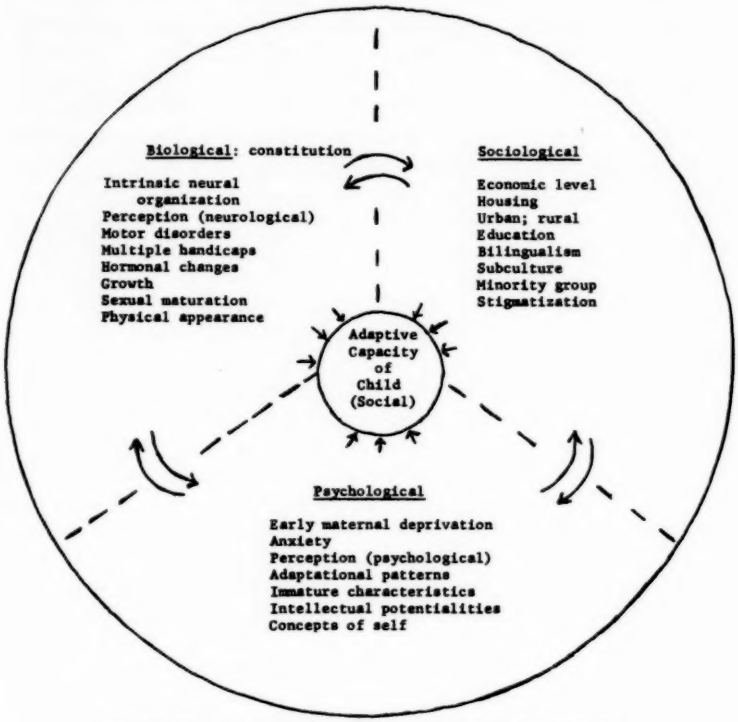

Fig. 12. Concept of multiple causation in mental retardation.

The central circle in Figure 12 represents the homeostatic ability of the individual; in this instance, as adaptive social capacity. Adverse environmental influences are indicated by arrows directed toward the central circle which tend to reduce the area of adaptive capacity. These influences differ in their intensity and do not have equal significance in all instances. At a critical point in the reduction process, mental retardation becomes recognizable.

Social capacity cannot, of course, be measured quantitatively. The final aim of development of the retarded child is the capacity to make an effective social adaptation, and the degree of social competence at-

tained is the only measure which has ultimate significance for the individual and for society. Too often social adequacy of the retarded person is measured by the criterion of successful employment without regard to the qualitative circumstances of his life. Social adequacy, in the sense in which it is used here, embodies some of the following concepts: self-sufficiency, productive use of capacities, realistic perception of the self and environment, regard for others, and the ability to gratify needs within social restrictions without serious conflict.

The conceptualization presented in Figure 12 encourages complexity of thinking with respect to causation. It permits the attachment of relative importance to past causes and to proximate causes currently accessible to evaluation. It also contributes to the hope that therapeutic modification of some, rather than all, of the adverse influences may permit social adequacy.

FACTORS AFFECTING INCIDENCE OF ADOLESCENT RETARDATION

The remarks which follow are related to factors in the biologic, psychologic and sociologic areas which affect the mentally retarded adolescent and contribute to a rise and decline in recognition. Apropos of this discussion, attention is directed to the review of research by Masland, Sarason and Gladwin[13] entitled *Mental Subnormality: Biological, Psychological, and Cultural Factors.*

Biologic Factors

The most overt and obvious changes at the beginning of the adolescent phase of personality development are the rapid *physical growth* and *sexual maturation* of pubescence. Available data as to the physiology of pubescence in the mentally retarded suggest that there are no essential differences from the normal, except perhaps for the somewhat later menarche of monogoloid girls described by Oster.[14] In view of this similarity, the stimulus presented to society by the physical growth and maturation of both normal and mentally retarded children should be the same. For the mentally retarded child, however, pubescent changes tend to catalyze problems and perceptions of him in others which were dormant or nonexistent previously.

Many parents, recognizing mental retardation over a period of time, infantilize a retarded child and, by so doing, tend to deny the realities of the problems associated with physical maturation. The period of pubescence, with rapid growth and the appearance of primary and secondary sexual characteristics, confronts parents abruptly with incontrovertible evidence of maturation.

Another consequence of rapid biologic growth for the retarded ado-

lescent is a widening of the discrepancy between biologic and psychologic development, due to differential rates of growth in these areas. Society perceives the child to some extent in terms of his size and physical maturity. In early adolescence the retarded child is often unable to fulfill the expectations of society for a more mature level of behavior as his body grows, and his psychologic inadequacy is accentuated. In late adolescence this discrepancy diminishes if psychologic growth continues through the period of decelerating physical change.

If physical maturation merely accentuated retarded psychologic development, one would expect a higher incidence of retardation in girls, as compared to boys, because of an earlier onset of pubescence. As may be seen from Figure 11, the reverse is actually true. It is necessary to invoke cultural factors relating to the behavior of the sexes as a partial explanation of this paradox.

Hormonal changes at pubescence are intimately associated with a heightening of aggressiveness and sexual interest. Aggressiveness is to some extent culturally encouraged for boys, but is not equally sanctioned for girls. Male aggressiveness, along with other culturally determined characteristics and expectations, therefore, possibly plays a role in the differential sex incidence of retardation. Commonly, parents tolerate a retarded child in the home poorly after pubescence, particularly if the child is a boy. Aggressiveness is accepted when a child is physically small, but not as readily when associated with increased physical size and strength. Aggressive behavior in a retarded pubescent child with siblings is often especially disturbing in a family, because the child's physical strength creates the possibility of advertent or inadvertent harm to the other children. Strongly conflicting feelings of parents for a retarded child often promote intolerance for overtly aggressive or antagonistic behavior, which may prove impossible for the families to integrate.

Sexual interests may become threatening to families when associated with physical maturation of the child and the capacity for genital sexuality. The male child may show intensive masturbation, indications of perversion, experimentation with younger children, exhibitionism, and the like. He may also experience difficulty in establishing distance between himself and his mother if he is dependent upon her for physical care at the time of his sexual development. Closeness to the mother is a problem of less significance for the girl at pubescence than for the boy. Parents, however, are often deeply concerned about promiscuity, sexual exploitation, or pregnancy in retarded girls, and may attempt supervision to an unwarranted degree.

At school, physical and sexual changes in the child may create sufficient preoccupation with the self, in some instances, that a reduced interest is available for learning. The mentally retarded child character-

istically is limited in his ability to engage in substitute activities and to sublimate.

The *physical appearance* of the retarded adolescent is significant in relation to social reaction and stigmatization. The more deviant and bizarre are the physical appearance, movement and behavior of the child, the greater is the likelihood of social isolation and prejudicial treatment. Ultimately, physical appearance is important in relation to job opportunities.

If cerebral palsy, epilepsy, visual defects, auditory defects, and the like, coexist with mental retardation in any combination, they multiply the child's handicap and difficulties in compensating for retardation.

The *motor ability* of some mentally retarded children is characterized by clumsiness and incoordination. Perhaps the somewhat mythical awkwardness of adolescence is superimposed on a basic motor defect, in some children, and contributes to problems in motor control during this period. Francis and Rarick[7] studied motor characteristics in a group of retarded children and found discrepancies from normal. In general, there is a close correlation between measures of intelligence and manual dexterity. Motor skills ultimately are less important in job performance than social adequacy and psychologic factors, however, and the significance of motor test results should be evaluated in the context of motivations, training opportunities, and performance in a work-sampling situation.

Psychologic Factors

Of the psychologic factors which contribute to recognition of mental retardation during pubescence and adolescence, the following are discussed here: (1) behavioral characteristics, (2) learning problems, and (3) the application of intelligence tests.

Behavioral Characteristics. Adolescence is a testing period for personality strengths and weaknesses developed during childhood and for others which continue to be developed during adolescence. Many mentally retarded children have met problems at previous stages of development imperfectly, and pubescence produces especially stressful effects for them. The mentally retarded child is often unable to meet problems during the adolescent period with behavior acceptable to society. As a consequence, his limitations may become apparent through behavioral manifestations indicative of the personality struggle. A high incidence of psychoneurotic and psychotic difficulties among the retarded is in accord with the beliefs and experience of workers in the field.[13, 26] Ultimately, social adequacy depends heavily upon personality structure and disturbances.

Adequate studies of personality development in mentally retarded

children, either cross-sectionally or longitudinally, are lacking. The ensuing discussion attempts to epitomize descriptively, therefore, several aspects of the behavior of mentally retarded adolescents, fully recognizing the heterogeneity of the group.

Lack of Control. An inability of many mentally retarded adolescents to control or delay emotional expression effectively is common. This difficulty is frequently associated with an inability to find appropriate and satisfying substitute activities. Sklansky[20] states that control of impulse depends upon the strength of counterforces and a relative ascendancy of control over lack of control. At pubescence the retarded child, who already has difficulty in control, experiences a heightening of impulses, and behavioral problems frequently result.

Dependency. Children who are extremely dependent upon their parents often reveal massive repression of feelings, decided passivity, and a withdrawal from activity. Others express their emancipatory strivings at adolescence in infantile forms, frequently as negativism or resistance to household routines. Childish negativism at puberty may intensify problems in the integration of a retarded child into family life.

Forbes[6] believes that dependency is fostered and prolonged by parents, somewhat automatically, in a retarded child and considers that professional help is often necessary for child-rearing of the retarded. Dependency may be prolonged for such realistic reasons as motor handicap, difficulties in learning self-help skills, and social isolation, but also for unrealistic reasons which reflect unresolved parental feelings and ineffective adaptations. In normal children cues of developmental readiness are usually recognized somewhat intuitively by parents. In retarded children, however, cues are often subtle or nonexistent, and recognition requires conscious parental effort often supplemented by professional help. The dependency needs of a retarded child are related to the developmental or "mental age" rather than chronologic age. Prolongation of dependency through puberty and adolescence is difficult for most parents, who ordinarily would experience declining dependency at this time.

Aggressiveness. Aggressive behavior was previously discussed in relation to the biologic changes of pubescence. In many instances the retarded child, who is often significantly deprived of parental love, tolerates the frustration of his wishes poorly and reacts with aggressive behavior. If the aggressive reaction is forcefully blocked or punished by parents, the child may turn the aggression upon himself with manifestations of head-banging, self-biting, excoriation of the skin, trichotillomania, and the like. Not all the problems of mentally retarded children are due to intellectual limitations, therefore, but are also related to difficulties in obtaining gratifications from the environment and to restrictions imposed by reacting persons.

Immaturity. Immaturity of the adaptational patterns is a common characteristic of retarded children. Inadequate resolution of conflicts occurs at various stages in the sequence of personality development, and persistent conflicts may hinder the child from progressing readily to successive levels of personality maturation. The child's methods of coping with the environment tend to retain infantile characteristics, to evolve slowly, to be stereotyped, and to vary minimally from one situation to another. Infantile behavior in an adolescent child often arouses antagonism in others, which leads in turn to further maladaptive behavior in the child.

Anxiety. Pronounced anxiety occurs at times in mentally retarded adolescents. In early infancy some retarded children cry excessively and cannot utilize comforting by the mother to relieve tension. Later, lack of parental love, as a reaction of parents to retardation, may contribute to the child's anxiety of separation. Parents at times respond violently, unpredictably and often inappropriately to a retarded child with outbursts of rage, which eventually may be related to an anxiety of bodily injury in the child. The retarded child is more than usually vulnerable to unexpected circumstances because of his inability to anticipate difficulties and to manipulate the environment. As a result, there is often anxiety and resistance in relation to change and a dependence upon constancy in relationships and the physical environment. Anxiety itself may lead to deterioration in performance and behavior.

Sexual Behavior. Sexual behavior was partially discussed in relation to biologic factors. Hormonal and physical changes per se at pubescence are not as important in determining sexual behavior or interest as are "mental age" and the level of personality organization. Immaturity of personality structure is usually associated with sexual behavior of an infantile or childhood type. Severely retarded children may reveal a striking lack of interest in genital sexuality throughout life. Less severely retarded children may experience significant problems in relation to sexual behavior, however, because of difficulties in finding substitute activities, in sublimating, in understanding sexual information, in establishing social contacts, and in comprehending social mores. Intensive masturbation and homosexuality are prevalent manifestations in institutions where strict isolation of the sexes is often practiced. In general, socially recognized sexual delinquency is uncommon among the mentally retarded, and fears that the retarded are sexually menacing to society are unsubstantiated and irrational.

Retarded Language Development. Retardation in language development characterizes the retarded adolescent, and a disproportion is frequently observed between verbalization and motor activity. The content of speech is primarily related to concrete things, and the capacity to

verbalize feelings and problems is limited. Reading difficulties must be carefully differentiated from causes other than primary retardation.[16]

Lack of Self-Esteem. Self-esteem is difficult for the retarded adolescent to develop, because he rarely accomplishes anything which persons significant to him, parents or teachers, consider worth while. Repeated failures and inability to please lead to an anticipation of failure, in many instances, and a withdrawal from situations in which achievement is required. A sense of unworthiness, guilt or "badness" may develop in the child, related to parental feelings and overt rejection by the peer group. A desire for punishment and behavior which leads to disapproval by parents is commonplace. Bullying actions toward siblings may fall into this category.

Juvenile Delinquency. Evidence for an unusual association between mental retardation and legally recognized delinquency is lacking. Studies by Tulchin[23] and Levy[12] in penal institutions elicited no data indicating that mental deficiency played an important role in criminal behavior. Woodward,[25] who reviewed a number of studies relating to the role of intelligence in delinquency, concluded that test scores were similar in delinquents and nondelinquents living in comparable social circumstances. A discrepancy between mean intelligence quotient scores of delinquents and the general population was attributed to an association of delinquency with "that constellation of cultural factors which adversely affect the test scores." Relatively close supervision, inability to plan delinquency well, and the like, decrease the probability of delinquency in the mentally retarded. A high delinquency rate in this group is not responsible for the increased recognition of mental retardation during pubescence and adolescence.

Brain Injury. A number of manifestations attributed to brain injury are seen in the retarded child.[2, 19] These include hyperactivity, distractibility, impulsivity, perseveration, irritability, and unpredictable variability in behavior. Psychological tests supposedly reveal inadequate inhibition of conditioned reflexes, unevenness of performance on intelligence tests, functional isolation of skills, defects in perception, concreteness of thinking, peculiarities of generalization, difficulties with numbers concepts, and the like. There is no uniform typology of brain injury, however, and these criteria originally were selected somewhat arbitrarily. Children with presumptive brain injury or defect reveal a heterogeneity of psychologic functioning which depends upon the severity of injury, the anatomic location of injury, the functions affected, the age at which injury occurs, the individual capacity to compensate, and many interpersonal and environmental factors.

Brain injury and environmental factors, as initiating causes of retardation, are frequently impossible to differentiate retrospectively. Gallagher[8] has presented evidence that psychologic findings overlap in

presumptively brain-injured children and familial mental defectives. Bourne[3] has shown a striking incidence of pathologic mothering and gross maternal psychopathy or psychosis in a group of young mentally retarded children. In each instance causes are difficult to differentiate on the basis of clinical findings.

Numerous experimental studies suggest that environmental factors influence the ultimate structure and function of the nervous system.[17] Hebb's[10] theory of the organization of behavior explicitly includes the concept that intrinsic neural organization, structurally and metabolically, undergoes differentiation in association with the sequential repetition of perceptual stimuli. The effect of neural damage and unfavorable perceptual experiences on intelligence may both be mediated through the mechanism of an impaired neural organization with a resulting similarity of functional disturbances.

Perception. The perceptual capacities of retarded persons are frequently presumed to be impaired. Recent studies in this area in normal persons promise particular applicability in the field of mental retardation. Benoit,[1] it will be recalled, utilized impairment of growth in perceptual integration in the definition of retardation, previously quoted. Perception, according to Witkin,[24] involves "not only the nature of the stimulus and the specific operation of the sense organs and associated neural pathways, but also other aspects of the individual's psychological makeup." The perceptual capacities of a person form part of the resources utilized in his adaptation techniques. Perception, therefore, contributes to adjustment and at the same time reflects adjustment. Characteristic modes of perception are believed by Witkin to appear early in psychological development and to remain stable over long periods of time.

Witkin[24] studied perceptual capacities in an ingenious series of experiments and examined the results in the context of the individual's overall psychologic organization, which was evaluated by a variety of techniques. Specific perceptual findings were correlated with the following characteristics in those who experienced growth-hampering forces in development: poor orientation to objects and the body as an object, dependence on the surrounding field and difficulty in differentiating the body from it; perception of objects and situations in a global, diffuse, poorly articulated manner; perception of the social environment and important people in it in vague ways; distorted or incomplete body image; amorphous, chaotic personality development; dependency; immature adaptational patterns; impairment of impulse control; and difficulty on intelligence tests requiring analytical ability. These characteristics are obviously applicable to the mentally retarded.

Learning Problems. Learning problems in the school system are of primary importance in the recognition of mental retardation during

pubescence and adolescence. If a child has problems in learning without serious personality disturbances, there is a reasonable possibility that he will be absorbed into society after leaving school wthout being identified as a retarded person. If the child has significant personality disturbances, in addition to the learning defect, he may still be identified after the school has ceased to be an agency of recognition.

Sarason and Gladwin[19] state that the changing nature of the school curriculum influences the age incidence of retardation. Curriculum extremes vary from concrete learning, on the one hand, to abstract learning, on the other hand. During the early school years, emphasis is placed upon the recognition and simple manipulation of objects. Abstract functions are resolved by the application of specific rules which the child follows. As time passes, emphasis shifts to concepts, abstractions, analogies, logic and reasoning, mathematical and verbal symbols, and the like. At this point some pubescent and adolescent children are first identified in the school system.

Children who are not totally unsuccessful in the early school years and whose recognition is delayed until pubescence or adolescence are often mildly retarded and have a relatively favorable prognosis for adaptation after leaving school.

Intelligence Tests. Intelligence test scores are often used in defining mental retardation, especially in legislative documents, and contribute to the recognition of retardation. Legislative acts frequently utilize a numerical test score without specifying the test to be applied, although values do not correlate satisfactorily from one test instrument to another.

A test score more than two standard deviations below the mean value for the test is suggestive of mental subnormality. The physician may view the results of intelligence tests, however, in the same perspective as medical laboratory results, i.e., requiring final confirmation of reliability within the context of the individual's problems. Intelligence tests are far from an absolute tool in the identification of retardation. Sarason and Gladwin[13, 19] discuss the limitations of intelligence tests in the following terms:

1. The selection of items included on tests is not guided by a consistent theory of intelligence.
2. School curriculum content is closely intertwined with test content. Test results correlate reasonably well, therefore, with school performance. Although tests tend to predict school performance, even this ability is limited.
3. Test scores of individuals are inconstant over time.
4. Tests differ in content and tap different intellectual capacities at differing chronologic ages.
5. Essentially all tests are loaded with cultural factors which place individuals with different cultural experiences at a disadvantage.
6. Test scores reflect school ability rather than social and occupational capacity. Tests apparently do not measure factors significant to problem solving in many non-test situations.

Sociologic Factors

The significance of the school system as a social setting for the recognition of retardation has been discussed. Much of the rise and decline in incidence of retardation during pubescence and adolescence is directly related to the standards of the school system and the society which it reflects. The interaction of the individual and society is essential for the recognition of retardation. Without society there is only biologic variability among individuals. Retardation is recognized as society establishes standards and places value on certain attributes while stigmatizing others.

The highest incidence of mental retardation in the Onondaga County study[22] and others was associated with lower socio-economic groups. Sarason and Gladwin believe that the cultural matrix of these groups is different from that of others. Culture and learning are closely interrelated, and culture undoubtedly affects the early learning experiences, the mechanics of the learning process, and the motivations for learning. Intelligence tests attempt to measure learning capacities, but may fail in subcultural groups because of the cultural bias of many test items. There is a gross lack of knowledge of the child-rearing patterns prevalent in the socio-economic groups from which a large number of mentally retarded children come.

Ginzberg and Bray[9] studied the records of the "uneducated" in World War II. They discovered differences in rejection rates for military service on the basis of regional-cultural differences, minority group membership, and expenditures for education in the region from which the men came. Many slow learners and illiterates, after special training, demonstrated a significant discrepancy between their capacity to perform and their test scores.

Other causative sociologic influences are listed in Figure 12 and are not detailed here.

The interrelationship between sociologic and biologic factors in the causation of several neuropsychiatric conditions, including mental retardation, is suggested in a series of epidemiologic studies by Knobloch and Pasamanick.[11] These investigators demonstrated a significant association in Baltimore between the sequelae selected and the occurrence of prematurity and complications of pregnancy. A high incidence of prematurity and complications of pregnancy was found, thereafter, in low economic groups.

INSTITUTIONALIZATION

Recent sociologic research by Farber[6] provides data which may be helpful in counselling parents about institutionalization. Farber's study demonstrates the effect of severely retarded children on siblings, and indicates the stressful influence of the pubescent or adolescent severely

retarded male child upon families. Following is a partial summary of the findings:

1. The marital integration of parents was little changed if a severely retarded girl was at home or in an institution, regardless of the child's age.
2. The marital integration of parents was little changed if a severely retarded boy was at home or in an institution while he was young.
3. The marital integration of parents was decreased if an older severely retarded boy was at home rather than in an institution.
4. Female siblings of a severely retarded child showed more signs of maladjustment if the child was at home rather than in an institution. The reverse was true of male siblings.

It is doubtful whether mental retardation has the same meaning for parents in all socio-economic groups. The type of guidance and counselling which has significance, therefore, may reasonably be expected to vary from one family group to another.

SOCIAL PREJUDICE

Social prejudice against the mentally retarded is responsible for a part, at least, of the difficulties of retarded children. Prejudice leads to social isolation of mentally retarded children, to difficulties in obtaining employment, and to problems in recruitment of professional personnel to enter the field of retardation. Undoubtedly, some of the difficulties of parents in relation to a mentally retarded child are a reflection of prejudicial factors in themselves which may be observed in the community at large.

PSYCHIATRIC STUDIES

There has been a theoretical assumption that psychotherapy with the retarded child is not feasible, because the child does not verbalize adequately, is unable to view his behavior objectively, and is unmotivated for change. Cowen,[4] on the other hand, who reviewed many psychotherapeutic studies of the mentally retarded, concluded that although, individually, the studies are open to criticism, together they substantiate the conclusion that at least some mentally retarded children can be helped toward independent social adaptation by psychiatric treatment.

There is a need for research data in the field of mental retardation. Psychiatric study of families and children could be exceedingly useful in increasing knowledge of development in the mentally retarded and in helping the child therapeutically toward adjustment in society.

SUMMARY

The incidence of mental retardation rises rapidly at the beginning of pubescence and adolescence and drops abruptly in late adolescence.

The factors responsible for recognition at this time may be biologically, psychologically or sociologically determined, or may have a multiple origin. Psychotherapeutic techniques have not as yet been adequately applied in mental retardation for purposes of research or therapy.

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DISCUSSION

DR. SIMMONS. One thing we ought to keep in mind as clinicians is that most of what we know about mental retardation is based upon studies done on institutionalized children or children who come to us with problems. Dr. Jolly, one of the men in our state who works with retarded children, has mentioned that at the Muscatatuck State Training School most of the youngsters brought there for institutionalization do, of course, have mental retardation, but the precipitating factor leading to institutionalization is usually one of the psychologic or sociologic reasons that Dr. Garrard has outlined.

In our own child guidance clinic here we do see retarded youngsters, and it is my impression that many of the sexual problems, the acting-out problems, and so forth, that we see in such children do not seem to have a very different basis than the same type of problems in youngsters who have normal intelligence. We see the same psychologic stresses in the family background, and so forth. It is often difficult to know what role the retardation actually plays in the symptomatology.

I think two things stand out in my mind that might have some reference to adolescence. One is that mildly retarded youngsters tend to reach their upper limits of achievement by adolescence, and this puts pressure on the family, community or school to make a change for them. They are becoming, increasingly, obvious misfits in the assembly line of producing adults or adolescents.

The other thing that I think is particularly important to clinicians, whether pediatricians or psychiatrists, is the situation in which the

child and the family have not accepted the retardation and have made no preparations around this fact. Suddenly it comes down on them like the roof. They have to make some plans. They now can no longer wait for it to go away, to get better, for the child to outgrow it. It becomes increasingly obvious that the child is not going to outgrow it, and the burying of the head in the sand has to stop. I think this may be another reason for the increased number of referrals at this age.

I just want to say one word about placement. I think it applies to any handicapped child irrespective of whether he is emotionally or intellectually handicapped. I consider this one of the most serious undertakings and one of the most serious obligations and that we take this upon ourselves sometimes all too superficially.

I know that some families are unable to handle the children or the problems they present. I would just like to say that we as clinicians are required to look not so much at what we are taking the child *from* as what we are sending him *to*. I submit that my own experience has often been bitter—sometimes pleasantly successful—but just as often, or more often, a rather bitter experience of placing the child, only to find out he has been placed with other human beings who have problems similar to or more severe than the parents from whom he was taken, and we end up at ground zero. We have to be careful about taking the child from the frying pan and putting him into the fire. I am not really proud of any of our child care institutions or foster home plans, with some outstanding exceptions.

By and large, I think as clinicians this subject of placement cannot be considered lightly.

DR. RICHMOND. I might just add one brief word to the discussion. I think Dr. Garrard ended up indicating that psychiatric and psychologic studies would have a good deal to offer to us in terms of better understanding of what is going on within families as they attempt to deal with the problem of the retarded child, particularly the retarded adolescent. I might suggest that if, as pediatricians, we engage in more intensive inquiry into this period, we might have a good deal to teach the psychiatrists in terms of how families deal with crises.

I would only emphasize that the medical evaluation is generally the first professional evaluation beyond that which the school has made. The pediatrician, I think, has a rich experience in helping families to deal with crisis or adversity in this kind of situation, frequently in a way that the psychiatrist often does not have available to him.

What I am saying is self-critical of us as a group in pediatrics because I think we have not taken adequate advantage of the opportunity to study how families do deal with adversity and how, not uncommonly, such adversity is integrated quite well into the total family functioning.

DR. SENN. I think there is certainly a swing away from the use of institutions for the mentally retarded child. I cannot help taking this occasion to remind us that one of the best institutions ever developed in the United States for the mentally retarded child was Letchworth Village, which had as its founder and first director the father of Dr. Sherman Little. This was a very unusual place. I think through the years it has continued to be an outstanding institution, not only for the care of children, but also for the training of people who work with the handicapped child.

The next presentation will be divided into two parts. The first, by Dr. Sigmond, will deal with orthopedic states in adolescents, and the second, by Dr. Lurie, will deal with cardiac conditions.

THE ADOLESCENT AND ATHLETICS

Orthopedic Aspects

HARVEY SIGMOND, M.D.

All the items mentioned in this presentation are common knowledge among orthopedists, but in no place in the literature are they assembled in a single orderly fashion.

The already crippled child has a consultant, and we will not talk about him. We will concern ourselves with the youngster who is right now busy getting himself crippled up. Our discussion seems to fall into three groups: first, the normal child who is the victim of violence or trauma in athletics; second, the youngster with congenital anomalies which manifest themselves at this period in life; and, third, the epiphysial conditions peculiar to adolescents. We are deliberately excluding all existing orthopedic conditions. We will talk of the common orthopedic problems of the healthy adolescent as seen in the common everyday practice of medicine.

First, we must emphasize the one great symptom with which we deal. This symptom is pain and its manifestations. Children of this age group don't complain of an injured part for more than a day unless there is something wrong. Even in the absence of an announced pain, they won't limp for more than a day or two unless there is some real lesion present. If there is no local lesion, the condition is psychic and deserves investigation.

TRAUMA

To consider the three groups mentioned above, there is first pure trauma. We won't consider obvious fractures and the like. They are

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easily recognized and are dealt with very well. There is a large group of more hidden injuries, however, that deserves our attention.

A sprained wrist is extremely rare, but a fracture of the carpal scaphoid is common, and rather frequently this will not show on an x-ray examination until two or three weeks after an injury. Every year we see one or more adults with advanced degenerative changes in the wrist due to a nonunion of a fractured carpal scaphoid that dated from a "wrist sprain" in high school. A sprained elbow is uncommon. Adolescents do not have supracondylar fractures, but the medial epicondylar epiphysis is easily pulled off, and it must be accounted for in every elbow x-ray from the age of seven to seventeen. Whenever an adolescent continues to show evidence of disability in any part after an injury, he should be re-examined rather than reassured. The boundless ambition of an adolescent will lead him into orthopedic difficulties.

Occult fractures in athletes are not common, but one bears mention. This is the stress fracture or the strain fracture due to overuse. One spring we had three *fatigue fractures* in high school children who were cross-country runners. These kids don't know when to stop and will drive themselves unmercifully. They not only drive their legs to the point of breaking their bones, but also they pound their joints to a point of severe synovitis. These are the painful knees and ankles we see in adolescents engaged in strenuous athletics. We see it here in Indiana more often among the basketball players. I remember one 15-year-old basketball player well over 6 feet tall whose knees were so swollen and hurt so much he could barely get through the first half. His height and weight were those of an adult; the muscles of his thighs were those of a little boy. Surely each step he took was unprotected by adequate musculature, and each length of the court he ran resulted in merciless pounding of his knees. My friend Jim Morris, a long-time athletic trainer, tells me he sees this often in high school basketball players and that these knees later behave perfectly well and perfectly normally. On examination nothing more can be found than simply a boggy knee that is painful to be on.

This same condition occurs much more frequently in the ankle. An ankle wrap is almost a universal practice among good high school coaches and trainers. For all our adolescents it should be encouraged. Fortunately, an ordinary *ankle sprain* is rather uncommon among adolescents. When it does occur, however, it is usually woefully neglected. I am speaking of the real sprain with a tear of the lateral ligaments of the ankle and inability to walk or bear weight without a serious limp. The ligamentous support of the foot and ankle has been completely torn asunder. Any dressing which permits motion will result in healing of the supporting structures in an elongated position, and the patient will be forever prepared to re-sprain his ankle whenever

it is subjected to the least strain. The only sensible dressing for such an injury is a rigid plaster boot worn long enough for the ligaments to heal.

A sprained ankle leads to the question of a sprained knee. Here we are suddenly in an entirely different league. The diagnosis of an ankle sprain is simple and really not too important. If the child can walk on it, it is not too bad. If he can't, he should have a plaster boot.

The diagnosis of a *knee injury* is an entirely different story. Here we have many more anatomic structures, each of which may be the site of violence. We have the medial and lateral collateral ligaments on either side of the knee. Deep down inside are the two cruciate ligaments. The semilunar cartilages are vulnerable to tear, and to complete our confusion this is the age in which we begin to meet recurring dislocations of the patella. There is no athletic injury in which an accurate diagnosis is as important as it is in an injury to a knee. On the field at the time of the injury before the knee is swollen and sore, the diagnosis is simple. In a few hours the knee is extremely swollen. It is so tender it can hardly be examined or manipulated, but an accurate diagnosis can still be made. The fooler, and the thing that will often lead us astray, is dislocation of the patella. This usually occurs in a child with marked knock knee. The dislocation is always to the lateral side. If we attempt to reproduce the dislocation by simply moving the patella over lateralward, it will send the child into a paroxysm of fear, anxiety and pain.

The other conditions about the knee yield to simple examination. When the knee is fully extended, if it is at all wobbly from side to side, you may be sure one of the collateral ligaments is torn. If the flexed knee can be drawn forward or shoved backward under the femur, then of course there is a tear of one of the cruciate ligaments. These abnormalities in motion of the tibia on the femur should always be looked for. If the knee is locked in either flexion or extension, an internal derangement of the knee, probably a torn semilunar cartilage, is responsible.

So the enigma of the knee unravels itself rather easily. Accurate diagnosis of these conditions is extremely important, since treatment is based entirely on the diagnosis, and the success of the treatment will depend upon how soon it can be carried out. If a collateral ligament is torn, its prompt repair is imperative. A delay of a week or two will make it difficult to repair, and a delay of several weeks practically excludes the possibility of a primary repair. An athlete with a torn collateral ligament which is promptly repaired can reasonably expect to have a normal knee and resume his position in athletics. An athlete with a delayed repair of a collateral ligament will almost certainly be out of athletics for the rest of his life. Dr. O'Donohue of Oklahoma

has tellingly and dramatically proved the truth of this conception. If the lesion is a simple dislocated patella, quadriceps exercises might be all that is needed. If it is a locked knee, but straightens after a short time, we should remember that a torn cartilage torn far enough toward the edge can heal itself and never give difficulty. If the knee remains locked, surgical intervention is necessary. If the knee continues to go out on the player, we have to determine the cause. The two common ones are a dislocating patella and a torn semilunar cartilage. The single occurrence of such a phenomenon should not ban the child from athletics or be an indication for surgical intervention. If there is a derangement in the knee, its repeated recurrence will certainly prove it is habitual, and will make clear the need of surgical intervention. In the meanwhile I see no reason to deprive a child of athletics, and the occurrence of a knee going out a few times will do the child no permanent harm. Actually, the repeated recurrence of the phenomenon will soon establish a pattern of behavior of the knee and will clarify what might otherwise be an obscure diagnosis.

Another item of pure trauma should be mentioned, and this is the simple *muscle contusion*. Perhaps I am interested in this lesion because we see the ones that are poorly treated. I do not have in mind the simple contusion that results every time the child goes out on the playground. I mean the violent, severe, heavy contusion that leads to a myositis ossificans. It is seen usually with repeated severe contusions to the thigh. I remember particularly seeing one patient after a 140-pounder unavoidably jumped on his upper arm as he was outstretched on the ground. The shoe cleats severely contused the biceps and brachialis muscles. His elbow was stiff and the arm extremely sore. The trainer and the parents tried to help the boy to get back motion by stretching and pulling and using a lot of hot applications on the arm. All these manipulations simply succeeded in maintaining an active myositis which proceeded to deposit a wad of calcium. This effectively anchored the muscle to the bone and provided a rigid check rein and joint stiffness. This boy, after almost a month of diligent treatment, had normal elbow flexion, but extension to barely a right angle. After the arm had been immobilized in a cast and put at rest for a few weeks, he could straighten the elbow to 170 degrees, and finally full, normal extension returned. Many similar stories could be written about the much more common myositis ossificans in the thigh.

CONGENITAL SKELETAL ANOMALIES

The second group of orthopedic conditions brought to our attention by athletics are the congenital anomalies of the skeleton. These are usually in the spine and in the foot.

It is rare to see an adolescent who complains of backache who does not have some definite organic lesion. Usually the lesion is a congenital anomaly of the *spine*. This is the age when the patient with a spondylolisthesis first notices a backache, and it is usually the playground which brings it to his attention. This is the age at which all the architectural weaknesses in the skeleton begin to manifest themselves. The manifestation may not be by a complaint of pain. We suddenly noticed that our own 15-year-old son was unable to bend over and get anything off the floor. Sure, he had noticed the way his back had been. He said it wasn't any worse than it had been for a month. He thought his complaints were due to stiffness from basketball practice. An x-ray examination showed a whole hodgepodge of anomalies and bizarre articulations in the lumbosacral spine. We see this frequently. Usually all the child needs is some postural instruction and some know-how in the use of his back in order to preserve it and save it from needless strain. Occasionally it is necessary to use a plaster body jacket for a month or two. If anything more than a temporary support is needed, the condition is probably severe enough to warrant a permanent correction as with a spinal fusion, but this is uncommon. We have a dozen teenagers running around and enjoying athletics and normal activities with a spondylolisthesis. One in particular was a member of a recent state basketball championship team who subsequently played professional baseball. This boy never wore a brace, but he was beautifully coordinated. After an absolute minimum of instruction he developed perfectly superb body mechanics. Though he might expect a little lumbago off and on in adulthood, I am confident he will never have any serious difficulty with his back and will never need a spine fusion.

The severe or third-degree *spondylolisthesis* in which L 5 is anterior to the sacrum is an entirely different matter. In it the architecture of the spine is so seriously disturbed that the child should have a spinal fusion at once and should be advised against rough contact sports. We all have many congenital anomalies, and simply because the report of an x-ray examination sounds bad, it is no reason to curtail the child's activities.

Idiopathic scoliosis might be mentioned at this point simply because we are talking about the back and the spine. It usually is seen in adolescent girls, usually in the nonathletic type. I see no reason for the scoliosis itself to curtail the child's athletic pursuits, except while the child is under active orthopedic treatment.

The *foot* is another location for congenital anomalies that manifest themselves during adolescence. There are two groups of these. First, the *accessory scaphoid*, a large bony knot on the inner side of the foot over the location of the scaphoid bone. If the knot is so large that it causes

a reddened, inflamed area of skin and subcutaneous tissue from the friction of a shoe during play, it is pointless to try to treat it conservatively. It is reasonable to advise its excision, which will temporarily inconvenience the youngster, but after it has healed he can resume normal activities. The other group of anomalies in the foot causes a *spastic flat foot*. There is an anomalous articulation under the talus and it is brought to our attention by a limp, a painful foot and inability to run. When we look at the foot, we see it is held in a valgus position, and the rigid cords of the peroneal tendons stand out behind the lateral malleolus. As soon as we grasp the foot we notice rigid fixation, spasticity, and inability to move the fore part of the foot on the hind part. An x-ray examination will show a talocalcaneal or calcaneal-navicular bar, and the telltale beak on the articular margin of the head of the talus. The only treatment to relieve this condition dependably is an arthrodesis. Thereafter the child may resume normal activities.

EPIPHYSIAL DISEASES

The last group to be considered is the epiphysial diseases. We will consider only the common ones. The first is adolescent round back, epiphysitis of the spine, adolescent kyphosis, Scheurmann's disease, or whatever term we choose. It is especially common among boys. It is aggravated by heavy work and certainly is seen more often among adolescents who do heavy work. From the nature of its pathology, an epiphysitis of the annular epiphysis of the vertebral body, it is reasonable to expect physical trauma from lifting or from excessive weight on the spine to aggravate the condition. This being true, I am inclined to look with small favor on most athletic pursuits for these patients. There is frequently an adolescent, usually his father, who is so all-fired athletic-conscious, we have to temporize. I temporize by forbidding football, weight lifting and hammer throw and am inclined to encourage billiards, pool and five-card stud. Certainly swimming is an excellent and innocuous exercise for anyone with an orthopedic problem. Golf is an excellent sport, but most adolescents do not play it. Basketball, baseball and tennis might be permitted in rather limited amounts simply to preserve peace in the family.

The lowly stone bruise of the early adolescent's heel is worthy of comment. This is an epiphysitis of the apophysis of the heel bone. We should note that the Achilles tendon is inserted directly into the apophysis and the cartilaginous epiphysial plate is subjected to enormous shearing forces and stresses as this tendon pulls on its attachment. I do not believe the pounding on the pavement hurts the child with a stone bruise as much as the enormous pull of the Achilles tendon which occurs with each step in take-off. This is further accentu-

ated by running, jumping or any kind of play. A lift in the heel of the shoe protects the youngster, not by any padding it affords, but by diminishing the amount of take-off necessary with each step. Though no particular harm results from athletics, there is no question running and jumping will needlessly prolong this annoying complaint.

A somewhat similar, though much more hazardous situation, occurs in *Osgood-Schlatter disease* at the knee. It is worthy of review for a moment. You will recall that in the lateral x-ray of the knee the upper tibial epiphysis sits on the top of the tibia somewhat like a policeman's short-billed cap. The patellar tendon is attached to the bill of the cap. The whole epiphysis, the cap and its bill, is separated from the tibia by the upper tibial epiphysial plate or cartilage. We are concerned with the anterior tibial tubercle, which is the bill of the policeman's cap. In Osgood-Schlatter disease it is fragmented and tends to separate from the shaft of the tibia. The powerful patellar tendon attached to the anterior tibial tubercle, the bill of the policeman's cap, tends to pull it off just as one would tip a cap back off his head. Sir Watson Jones calls it an Osgood-Schlatter sprain, and this might be an excellent concept. The plane of cleavage goes through the upper tibial epiphysis. With an extension effort, with a pull on the patellar tendon, the bill of the cap and the whole front half of the knee joint, articular cartilage and all, may be pulled off. We don't see this frequently, thank God, but we see it often enough to make us cautious about letting children with Osgood-Schlatter disease engage in too strenuous athletics. I remember one high school basketball freshman who had been playing with a sore knee for several weeks. When he jumped center at the opening play of a Friday night game, he simply pulled off the whole anterior half of the knee joint and effectively ended a promising athletic career.

Last, but far from least, is the problem of a *slipped femoral epiphysis.* I think it is often overlooked and treated by reassurance when it should be treated after examination. Any adolescent who walks with a hip limp and complains of pain in the knee or one who complains of a little pain around his hip, or of a catch in his hip, should be strongly suspected of a slipped capital femoral epiphysis. The early preslipping stage is now recognized by all competent roentgenologists. It should be recognized and detected before frank slipping or deformity has occurred. It can be detected clinically at a very early stage by the manner in which flexion at the hip joint occurs during the course of examination of the child. Ordinarily one is able to flex a hip with the knee flexed and bring the knee toward the opposite shoulder. With an early slipped epiphysis this adduction of the femur cannot be attained, and the femur instead will tend to go toward the same shoulder in a position of abduction when the knee is brought across the ab-

domen with flexion at the hip joint. This one finding alone is enough to put the child on crutches until the diagnosis can be definitely made. Rarely the slip occurs as one grand slide with complete displacement of the epiphysis. Almost always it is a slow and gradually increasing process like wax bending in the sun. We believe it takes weeks or months for an appreciable deformity to occur. If the condition is recognized before significant deformity occurs, the hip can be spared a great deal of damage. Simply putting these children to bed with a little traction often is enough to take care of the situation. The treatment of an early slipped epiphysis or the early preslipping stage is a subject of debate among orthopedists, and we will not go into that controversy. We hasten, though, to take advantage of this opportunity to refresh your acquaintance with slipped epiphysis because it merits attention. Certainly a slipped epiphysis of the hip is a condition in which the children should be absolutely forbidden all kinds of play. Until the epiphysial line at the hip joint is healed, these children must be protected from all activity involving their legs with superimposed body weight.*

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* For discussion, see page 181.

THE ADOLESCENT AND ATHLETICS

Cardiac Aspects

PAUL R. LURIE, M. D.

Athletic play comes naturally to children as it does to the young of animals. It is a vital function, a testing of wings, a preparation for food-getting, fight or flight, in addition to being in itself one of life's great enjoyments—in other words, fun. As societies evolve, and as children mature, a cloak of mores, sentiments and formalism surrounds and embellishes the biologic core of athletics. Thus any consideration of athletics must be made in the light of many facets of the current scene and with care to separate medical fact from social valuation.

Interest in the cardiac aspects of athletics centers around several matters: (1) the lack of physical fitness of American youth pointed to with distress especially by defense-minded authorities;[9, 12] (2) the interest of both medical profession and public in the growing hazard of coronary atherosclerosis and the question of the relation of athletics in adolescence to coronary artery disease in adult life; (3) the question of just how much emphasis should be given to athletics in the life of the adolescent, the cardiac aspect of which resolves into: what harm can be done to the heart by excess or deficiency, and what constitutes excess; finally, (4) the question of athletic participation for the child with the abnormal or the questionably abnormal heart.

At the outset I wish to call attention to variables which must be defined and kept in mind when one discusses this subject either in general terms, as I am doing here, or in specifics when advising parents and patients or working as a team or school physician. They should be defined for the individual as he participates in a given sport, at a given

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stage of development, in a given setting, and at a specific state of training.

First, the degree of *energy output* in the athletic event itself, both total and as distributed in time, varies greatly.[8] Baseball involves sudden bursts of activity and considerable time for regaining a steady state between bursts. Football and basketball are similar, but with higher over-all levels of energy output. Running a dash is accomplished usually without significant breathing during the few seconds that are required, and virtually the whole energy cost is paid in the postexercise period. Running long distances involves an endurance phase which is nearly a steady state in which the athlete is taking in as much oxygen as he requires, followed by a phase of all-out effort in which increasingly more oxygen is required than is taken in, the racer ending in a state of complete exhaustion and a huge oxygen debt. Swimming for speed is even more taxing than running, involving the need for perfect coordination of breathing with the other body movements.

Another variable is the state of *training*, which will be discussed later at greater length. The higher the state of training, the less will be the cost to the body of a given amount of work.

An allied matter is the type of *training program*. This involves consideration of whether it is completely informal, but may involve excesses because of lack of supervision, as in the sandlot, formal but moderate, and at the other extreme, formal and highly rigorous. Some zealous coaches impose such rigorous training that the actual contest is a pleasure in comparison. In this day of serious athletic experts the element of fun becomes hard to find, when a man spends hours practicing basketball, foul-shooting blindfolded. In at least one progressive community in proudly basketball-mad Indiana the physical training in the schools from primary grades up is geared into a feeder system for ensuring a good high school team.[10] In mentioning these matters I am attempting to avoid making statements of what is proper, for such evaluations range far beyond the area of medical science. If one uses the analogy of the field of nutrition, one notes the tremendous individual and cultural variations in diet and the fact that even basic minimum recommendations do not suit everyone.

The degree of competitiveness of the setting affects the psychic aspects of energy output. *Competition* works ambivalently, firing up energy output to cause records to be broken, and at the same time causing inefficient energy utilization in the various manifestations of anxiety. The loss of sleep in length and depth in the face of the culmination of an important tournament may result in a chronic fatigue state in which the benefits of training are quickly lost—in other words, staleness.

The parallel demands upon the adolescent's time and energy must

be considered. In these days of interplanetary apprehension, homework assignments are most demanding, and, if athletics are to keep a broad base, participation and scholarship must not be mutually exclusive. Jobs and social and cultural pursuits have a place, too, in the development of a rounded adult.

The degree of personal contact is of orthopedic rather than cardiologic importance.

The age and, more important, the exact degree of physiologic maturation of the adolescent are of great importance in relation to the particulars of participation. Maximal oxygen utilization is generally accepted as the best measure of cardiovascular respiratory fitness. The young preadolescent child usually cannot be stimulated to all-out physical exertion, and tends to have a relatively small maximal oxygen uptake per unit of body weight. In the immediate prepubescent stage, factors of motivation push the child's maximal oxygen uptake up remarkably. There is a slight temporary fall or plateau with further development as the bones outstrip the growth of skeletal and cardiac muscle for a time, and then in the postpubescent stage comes a rapid approach towards the highest maximal oxygen uptake of life, that of young adulthood.[13] Training modifies the trend of maximal oxygen uptake per body weight plotted against age. Thus a person of great talent for a particular sport, recognized early and trained intensively, might never have a recognizable plateau of adolescent relative cardiovascular respiratory inefficiency. This would have to be such a sport as running or swimming, in which the training involved all-out effort.

PHYSICAL FITNESS

As has been noted increasingly, the trend in our society is for fewer persons to participate more intensely in athletics, while growing proportions are relegated to the ranks of spectators. Indeed, with the prevalence of the automobile as the major means of locomotion, replacing walking and the bicycle, many adolescents get most of their exercise via the sport page and the television set. Physical fitness has been subdivided into three categories by Gallagher,[3] who points to (*a*) medical or organic fitness, which means a structurally normal physique; (*b*) dynamic fitness, which is the same as the cardiovascular-respiratory fitness of other authors—namely, the ability of the body to tolerate intense all-out effort; and (*c*) motor skills fitness, which is a measure of coordination and skill, ability to use specific muscle groups with agility and efficiency. We are concerned chiefly with dynamic fitness here.

Training[8] causes tremendous increments in cardiorespiratory fitness,

as tested by such "natural" activities as step tests, treadmill, and bicycle ergometer tests, in which skill factors are minimized. The trained state is achieved more by intensity of effort than by prolongation of mild effort. The expression of training is the development of an increased stroke volume with relatively slower pulse at given levels of cardiac output, and higher maximal oxygen uptake per minute per body weight when maximal pulse rate is reached. The diastolic volume of such a heart at rest is somewhat larger than in the untrained state, and there is a tendency toward bradycardia, which may be masked by anxiety in the presence of a medical examiner. This enlarged heart is hypertrophied as well as dilated, with improved capillarization of the myocardium and larger myofibrils corresponding to the similar changes which occur in skeletal muscles. When the athlete drifts out of training, the myocardium slowly shrinks in the same way as does a skeletal muscle; it does not become fibrous or fatty.

Also, it is believed that fine peripheral vascular adjustments of circulation are a part of training, so that unnecessary and inefficient circulation to parts of the systemic vascular bed is avoided.

The converse of the trained state is *effort syndrome*,[4] in which the person without specific diagnosable organic unfitness manifests cardiorespiratory exhaustion with tremendous acceleration of pulse, cardiac output, and respiration at rest or during inappropriately slight amounts of work. The fact that under the stress of motionless standing the cardiac output often falls dramatically and the pulse accelerates greatly is one indication that this condition is at least in part an expression of inadequacy of peripheral circulatory regulation. Disuse further aggravates this actual physical handicap. Anxiety symptoms readily become engrafted upon these physical symptoms. Strict physical training in planned increments can reverse the effort syndrome[5] and give the person a feeling which can be expressed no more aptly than "the feeling of fitness."

RELATIONSHIP OF ATHLETIC PARTICIPATION IN ADOLESCENCE TO CORONARY ARTERY DISEASE IN ADULT LIFE

How do athletics actually prepare the individual for life from the standpoint of future physical welfare? Figures which have shown the increased number of early coronary artery affliction in college football players as compared to their average classmates have been adequately explained on the basis of the high correlation between the body type which excels in football and the body type which tends to have the highest incidence of coronary artery disease. The modern football player leaves college and usually takes a job as a businessman who is

then subjected to the stresses of sedentary modern living and rapidly drops his excellent state of physical training.

Perhaps the most helpful guide to the understanding of the relationship between physical activities and myocardial disease comes from the work of Morris[11] on the London bus drivers and conductors. The sedentary drivers have a much higher incidence and severity of coronary artery disease than do the active conductors, who climb up and down the stairs all day. Virtually all other influences upon these men are very similar. The same group has made many other careful population study researches in this general field and find abundant confirmation of their thesis that heavy physical work continued over many years actually exerts a protective effect as far as coronary artery disease goes.

Physical training in adolescence seems to have little to do with the ultimate course of coronary artery disease or with longevity, whereas the actual way of adult life, including the maintenance of some degree of training, is probably of great significance. If longevity is our goal, the acquisition in adolescence of habits of muscular activity which can be maintained through adult life would seem desirable.

CARDIAC DAMAGE FROM ATHLETICS

I have tried to avoid setting limits to the desirable intensity of athletics. While there are limits of endurance which are dictated for the individual by stage of maturity and state of training as well as size and skill factors, these are physiologic, natural limits. When the heart and muscles cannot circulate enough oxygen to support the work, and blood and muscle lactate rise sufficiently, the work must lessen or cease. No modern physiologist disagrees with the general statement that you cannot damage the heart of a normal adult by excessive exercise. There has been no really cogent denial of this same principle in the case of normal children and adolescents. Collapse or cessation of activity simply occurs at lower levels of maximal oxygen uptake per body weight. The state of the individual who is in collapse after all-out exertion has no resemblance to cardiac decompensation; rather, it has been likened to hypoglycemic shock.[6] The heart is not even acutely enlarged.

Thus we have no definition of what is an excess of athletics from the standpoint of the heart. It would seem that if staleness and psychologic fatigue are avoided by skillful coaching, the tolerance limits of the individual would keep him from harm. Of course, the *reductio ad absurdum* of this is a lad with a marvelous cardiovascular apparatus whose whole day is devoted to keeping this apparatus in tune. It is not my place here to set goals for individuals or communities.[1] I am strongly recommending some participation for all.

ATHLETIC PARTICIPATION FOR THE ADOLESCENT WITH THE ABNORMAL HEART

Although the foregoing paragraphs are quite didactic, they specify *normal*. Confusion and indecision really begin when one is confronted with the abnormal or questionably abnormal heart.

The physiologists' preoccupation with normals and the clinicians' concern with sick patients who need help have left a zone of medical activity largely untouched, that of interest in athletic placement of the questionable or relatively mild cardiac. The obligation of the physician to protect the athlete from major harm and to protect the institution from blame leads to the drawing of sharp lines of eligibility for team sports. If I can say anything worth while in this section, it may be the simple statement that a pronouncement of ineligibility "because of heart mumur" should not be made without assumption of full responsibility for seeing that the individual receives as much expert diagnostic workup as is necessary to get "the facts" and that he is given an intelligible interpretation of them.[14] It is quite possible that the social inutility of a single improper disqualification may outweigh the social utility of a year's work with the rest of the squad.

An enlightened point of view in this field cannot be followed without full cooperation of physician, coach and parents. The assignment of the mild cardiac to the team in a position requiring high skill but moderate dynamic fitness is an excellent morale booster for the patient. It may even mean the salvaging of an excellent talent for the team.

Far too little is known about the generalities of the question: Can overexertion damage the abnormal heart? Because of the generally over-protective attitude alluded to above, even less is known about the specifics of the question: Can overexertion damage this particular abnormal heart, and, if so, how much exertion is too much?

If obligatory cessation of muscular activity limits the normal heart from overexertion, why does it not work the same way for the abnormal heart? It probably does in most instances, and indeed there are many recorded instances of champions in such all-out sports as running who have had definite cardiac lesions.[7] Most of these have been clinically classified as mild mitral stenosis, mild aortic insufficiency, or combined mitral stenosis and aortic insufficiency. With the new interest in accurate diagnosis of congenital cardiac lesions it is desirable that cardiologists document the athletic exploits of persons who have had their lesions evaluated qualitatively as well as quantitatively at least by cardiac catheterization in the resting state. Young children with mild to moderate ventricular septal defects are usually described by their parents as "very active" or "on the go all day." In contrast, it is surprising how few adolescents with the same lesion are permitted to

engage in sports. It is probable that the disuse cycle mentioned in the discussion of effort syndrome develops, and this may be a partial explanation for the worsening of symptomatology such patients sometimes experience in adolescence, at just the time when a normal postpubescent's dynamic fitness takes an upward surge. Obesity is often an additional factor in the young people who are advised to "take it easy."

Certain lesions are to be viewed with respect. Although mild mitral stenosis may be little more than an impressive auscultatory finding, *mitral stenosis* of critical severity results in a cardiac output so fixed that it cannot be increased during exercise, and pulmonary edema may supervene on slight effort, most of which is performed on an anaerobic basis.

Aortic stenosis limits coronary perfusion, indeed may create some reduction in coronary artery pressure by Bernouilli effect due to the high velocity central jet. This lesion has acquired the reputation for producing sudden death during exercise, or even at rest, probably due to ventricular fibrillation or cardiac standstill on the basis of myocardial ischemia. On the other side of the coin, the true physiologic mildness of many stenotic lesions at this site is obscured by the tremendous loudness of the murmur. Patients with aortic stenosis need careful diagnostic studies to evaluate the pressure gradient across the valve, and the cardiac output and electrocardiographic response to exercise. If they are not candidates for valve surgery, because of mildness of the lesion, they are often candidates for cardiac rehabilitation, part of which is the encouragement to participate increasingly in athletics.

In *cyanotic malformations* with decreased pulmonary blood supply and venoarterial shunt the patient quickly develops severe aggravation of cyanosis and dyspnea, so that he is forcibly constrained from overexertion. No artificial limit is needed.

Active *rheumatic myocarditis* is an instance in which a temporarily conservative approach is probably warranted, with gradual increase of the patient's permissible activity after clinically demonstrable evidence that the activity of the rheumatic process has ceased. On the other hand, the ultimate point of exercise tolerance to which the healed heart may attain should not be artificially restricted. Discussion of goals with such patients is of major importance and is often neglected by the physician.

Further application of prescribed stepwise exercise as a rehabilitation measure in pediatric and adolescent cardiology is certainly as justifiable as the already much-discussed use of these techniques in geriatrics and the middle-aged atherosclerotics.

Consciousness of the apprehension involved on the part of physician as well as parent and patient and the medicolegal implications of a most unlikely untoward incident occurring in such a rehabilitation

process will necessarily limit this sort of medical therapy to the interested cardiologist in the case of the more severe abnormalities. On the other hand, the "ordinary doctor," by exploring the limits of his patient's cardiovascular-respiratory tolerance under his own direct observation, using a step and a watch,[2, 8] can feel secure in making recommendations for the milder abnormalities.

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DISCUSSION

DR. GALLAGHER. I was delighted to have Dr. Sigmond say many of the things he said. This matter of looking for some of these ailments and of not being wholly guided by what the x-ray man tells us cannot be repeated often enough. We rely on him too much, good friend as he is. When we do, we will certainly get caught by scaphoid fracture, for instance. Similarly with their spine x-rays: we ran a group of these at one time, and found no more normal than so-called abnormal ones.

The main thing about the management of these youngsters, as the pediatrician or the general practitioner sees them, is not to be over-frightened about them. Our orthopedic friends, by and large, see the more severe injuries. These are the patients who worry and baffle us, and they go to him. He does not see, under most circumstances, the run-of-the-mill, milder disorders. In such a condition as Osgood-Schlatter disease I have many times come to the point where I wished nobody ever mentioned it, because you often see what you could properly so diagnose, and yet not much should be made of it. However, it does occur in a severe form and can, in later life, present a considerable problem. All I am suggesting here is that just because an orthopedic condition exists, it does not mean that it is necessarily as severe as you might believe.

The other point I would like to make about these orthopedic difficulties is that one needs to know a great deal about these patients themselves. First, certainly to remember the thing which Dr. Sigmond said, that these young people go at things strenuously. They will not admit when they are hurt. I think we had just better accept this, and then in our treatment of them, particularly in the convalescent care of their injuries, take this into consideration. The knee which now feels all right, has no swelling, no tenderness and "you can get around on it, can't you?" is not fit to go back to football. The knee was better than that when it was hurt the first time. I would prefer that youngster not to go back to football, until the quadriceps is stronger than it was before the initial injury. By and large, youngsters will accept this kind of prescription, and a restriction period during which they are doing something strenuous which they cannot but believe will result in more strength. They will not "buy" just "Take it easy for six weeks," or "Wear this bandage and be careful," or "Sit on the edge of your desk and raise your leg." But they will buy knee-strengthening exercise when they see themselves going from an initial 20 pounds of iron up to something like 80 or 90 pounds. They will know they really are strengthening the quadriceps. You are gaining more time, gaining more healing, and I think you are gaining some preventive benefit by getting the quadriceps in good shape.

Just a few words about fitness. I think the thing which Dr. Lurie said first is terribly important: your decision, your talk to this particular patient, has to be in terms of this individual and the kind of exercise he contemplates, and the conditions under which that exercise will be carried out. You have to know what the boy is going to get out of it, and what his needs are. You have to know what he puts into it, who is going to supervise it. It is not a quick decision. You have to think of the boy's past and of his present needs for success, recognition and acceptance. And you have to think of what he is going to be like as an adult: Is he going to have his present needs gratified, but later hobble around on every damp day, and curse you out the next 40 years because you let him do this?

Dr. Lurie intimated that some athletes spend a great deal of time and effort at their sports. I know intimately one coach who drives boys very hard. He gets good results, but he also believes that it does young people good to learn that hard work brings success. I haven't any patience with sports done for the gratification of a young coach's desires, but there is a great deal to be said for hard training in terms of character development as well as fitness.

In connection with these youngsters who have more or less heart disease, one can depend quite a bit on them to set their own limits. I do not mean to say that this capacity of theirs, if you will, to set their own limit should displace the electrocardiogram and fluoroscopy and their doctor's judgment, but it is surprising how nicely these young people do this, and how badly many of us do it. I am sure we have caused a great deal of heart disease by being what we call cautious. In being cautious, we have not been careful of our patients.

Just a word about fitness itself. This has been tied up with the White House in the last few years, but it has been talked about for 60 or 70 years. Usually there is an upsurge of interest in this after every war or with threat of war, and then it peters out again. However, we who are interested in people being more fit, believe that you feel better if you get some exercise and when you are more fit. I know I feel better when I get out of the office and off the chair and wade a stream or sail a boat or do something else that is appropriate. Exercise is good as long as it is appropriate for the individual.

Dr. Lurie said that perhaps I would say something about strength and its relation to all this. I think strength is important, and that if one has a little extra muscular strength, more agility and better coordination, then one will pay less from a cardiovascular standpoint for the same amount of exertion. I think you have seen this. The graceful person doing the step test has a better score, though I do not think his cardiovascular system is better. He is just able to perform this thing with less effort. One should build strength rather than rest. Perhaps

rest is a fine thing for little children and adults, but it is usually inappropriate for the adolescent. If it is possible to strengthen the adolescent so that he may then carry on, I would, by all means, do this. When the orthopedic surgeon says the boy with backache has nothing that is going to be harmed by exercise, I would hope that he would build up the extensors of his spine and his abdominal muscles so that he can go ahead and do those things which previously had caused him discomfort. The same is true for the youngster who seems overfatigued because of his pump. He will not get over his effort syndrome by taking a nap; he will get over it by running more and more, faster and faster, not by sitting down.

DR. JOHNSTON: A word about some of the undesirable effects of bed rest. The story of disuse atrophy is well established, but there has been hesitation in applying the lesson to children with heart disease. In this group, after the vital signs have become normal, the same losses of calcium and nitrogen will result from complete inactivity as occur with other patients. I was impressed with the slight amount of activity needed to offset these losses. We measured the effect on the balances of pushing one wheel of a bike attached to the foot of the bed for one minute morning and afternoon, increasing by one minute daily. The effect was increasingly anabolic until we reached a point at which pulse and pulse pressure became abnormally elevated; beyond this point nitrogen storage dropped, but calcium storage continued to improve.

DR. SHAW. We have talked a good deal about the adolescent and his psychiatric and psychologic problems. In this discussion of the handicapped I had hoped to hear something about the adolescent who suddenly and perhaps permanently becomes handicapped. There are many illustrations of this, but the best one is poliomyelitis.

In my memories of more than 2000 cases of this disease the saddest thing I ever saw was the 13-year-old boy who was paralyzed in both legs, continued to be for several months and probably remains so. His father, even during this period of obvious crippling, never gave up his ambition that this boy was going to play in the Stanford backfield.

I sat down finally and talked to him and said, "Listen, this boy has a terrific handicap. He has to change all his objectives. You have expected him to be an athlete, and he has always been an athlete. Now you must stop talking about his playing in the backfield and help him find new objectives in which two good legs are not going to be a necessity."

That was the last I saw of that boy. The father never forgave me for that speech, because he just could not take it. He had not been

prepared to take it. I was only a consultant, but I ceased to be that right then.

The adolescent, and the adult, too, goes through a strange and inevitable sequence when he comes in with early poliomyelitis. At first he expects that you will tell him that he really hasn't got the disease. Once the diagnosis is established he says, "Well, I haven't any paralysis yet, so I am one of the nonparalytic cases." You can only agree that you hope so! If paralysis finally appears and the youngster realizes the extent and significance of his crippling, he really hits bottom and goes from optimism to extreme pessimism. At this time he needs kindly and skillful counsel.

Adults who have poliomyelitis may be seen to go through all the terrible mental struggle of what they are to do about their family, what the wife is going to do about the husband, what the husband is going to do about the wife. Many times all the aims and objectives of the affected adult have to be made over to suit his handicap. The adolescent has not acquired so many responsibilities, but he has to make over his dreams and ambitions to suit his degree of crippling.

Some adolescents, for that matter some adults, faced with the problem of severe crippling, simply develop an infantile attitude and the willingness to submit to total care. These are the ones who make the saddest acceptance of their disability. There are others who say, "I don't care what my handicap is, I am going to fight it out!"

There are several other conditions which readily come to mind in which the adolescent must adjust to the limitations of one or another sort of activity for long periods of time. These patients may verbalize their fears and frustrations poorly, and it is a great challenge and opportunity to the physician to assist them through this period towards maximum rehabilitation and to help them establish new objectives which they may suitably attain.

GENERAL PRINCIPLES IN CLINICAL CARE OF ADOLESCENT PATIENTS

J. ROSWELL GALLAGHER, M.D.

This is one of those unusual situations in which the fellow who is down as the Chairman seems to be the one who is doing the talking. It says here, "General Principles in Clinical Care of Adolescent Patients." That offers a lot of latitude, which I would probably take anyway.

I thought we might begin by my talking a little about what we have tried to do at the Children's Hospital in Boston, why we have done it, and why we think we have done it in the way that we have.

We established there, seven or eight years ago, a special clinic for adolescents, a place where we would take care of boys and girls between the ages of twelve and twenty-one. We did this because we felt these people were somewhat different from young children and from adults. And we felt not a proportionate amount of time had been given to research in the ailments they have, or a proportionate amount of time given to the training of doctors in the care of these people—certainly, nowhere near as much time as had been given to the training of doctors who would subsequently care for infants and little children, or who would care for the elderly.

We did not want to set up a new specialty, as I said the other day, and we did wish to open up this new clinic to general practitioners, pediatricians, internists and representatives of all the other specialties. We fully realized that not all the members of any of the specialties would be particularly good with adolescents or particularly comfortable with them, but we thought all ought to have the opportunity to try, because we knew that most of these people did, now and then at least, care for adolescents.

So, in effect, we established a general practice clinic, within which

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there were no specialty sections, for the care of the youngsters in this age group regardless of the ailment and the complaint which they, or their parents, might have. Working in this Adolescent Unit are all kinds of doctors, and there are all kinds of problems. The focus has been on treating *people* rather than treating *diseases*.

We certainly have not meant to imply that all adolescents should be treated in such a special clinic, or that they should be treated only by doctors who have had this special kind of training.

Ours was set up as a service clinic, a research clinic, and a training clinic, a place where we hoped we would see enough adolescents so that doctors who wished training would have a wide experience with them. We also hoped that by the fact of our doing this we would bring to adolescents a little more attention than had previously been their lot. They have had a great deal said about them, but relatively little done for them. Furthermore, we hoped that by setting up such a place not only would their medical care be better, but also that some of the things which we might attempt to teach would spill over into the care of people in other age groups.

I should make it clear that we were not implying that those clinics and medical centers run on a specialty basis are any less efficient than ours. It is only that we felt that within medical education it might be well at least to try the experiment of having a general practice sort of setting, and that if this were to be done, it seemed that it was fortuitous the adolescent needed something done, and you could put the two together. The adolescent seemed to be the sort of person who needed this, and the sort of person on whom it would be quite reasonable to try this sort of general practice approach. It just did not seem as though it would work out well were we to set up a place for the care of adolescents, and then proceed within that place to set up special clinics for their care.

For example, we thought of the first adolescent coming into such a clinic, perhaps a fat girl with acne, failing in school, not getting along with her mother, having dysmenorrhea, and recurrent headaches, and of this girl then having her history taken by some doctor who would sit down and make out a great pile of laboratory and referral slips so that she might go to the obesity clinic, the psychiatric clinic, the psychologist, the neurologist, and the gynecologist. We suspected that she might get to one or two of these, but we could not believe that she would ever get back to us, her admitting physician. In short, we envisaged her as a little character standing on a stage, with a spotlight on her, looking out over this great audience of doctors and asking, "Is there a doctor in the house?" So we have tried to avoid all that sort of referral and all those specialty clinics.

However, we do have specialists. We certainly did not want to throw

the baby out with the bath. So we have representatives of most of the specialties associated with us. These physicians have been chosen for several reasons. One is that we suspected that they would be good with adolescents, that they would like adolescents, and that they would be comfortable with them. Another is that they enjoy teaching doctors about their specialty. And many of them have also been chosen because they had had experience with adults. We have felt it most important that our specialists who would be telling us what we ought to do for adolescents, should be people who had seen things go wrong in adults which they felt might never have happened had these people been treated differently in their youth. So we have the benefit not only of their skill and wisdom in their specialty, but also their experience with older people who have gone through things which, perhaps, could have been prevented.

This system, this method of the patient having one physician and also having the benefit of specialists' teaching allows us, I think, to have the advantages of the general practitioner, the doctor that little girl was looking for in that great audience, and it also provides that youngster with the specialists' knowledge and skill. These specialists are with us as teachers, as supervisors, and as directors of research in their areas, but they are not there as people who take over or treat patients. However, our orthopedic consultant takes over the youngster who needs his cartilage removed, our gynecologist is the one who removes a tumor, but neither of them takes over the care of the youngster who does not need some such special maneuver. Our psychiatrist also is there to teach our doctors how to care for the vast majority of the personality and emotional and behavioral difficulties which are common in this age group, but occasionally we find a youngster whom it would not be appropriate to treat within our unit, and these are referred to the hospital's Psychiatric Service, just as we would refer to the Surgical Service a youngster who needed an appendectomy.

Just a word about the management of this, the mechanics, if you will, for this is important. I think we have to assume with these young people that we may have to sell ourselves to them. This may be their first experience of going to their own doctor. They may regard him with a certain degree of suspicion. No longer are they going to go to the doctor, their hands in Mamma's. No longer is Mamma going to tell the story. Mamma is no longer the one to be given the prescription, the pills.

Somehow we want to get across to these young people: "Your mother is awfully nice; your daddy is awfully interesting, but *you* are our patient. It is your health in which you and I are interested. Your health has now become your responsibility."

It is vitally important when dealing with the adolescent to get this across and to combat the sort of thing which a patient said to me the other day. This patient had come in after a wrist injury and, because of a certain amount of restriction of activity, seemed to have free time to have that check-up that the mother had wanted for a long time. In the course of taking the history I asked about his back.

"Oh, my back kills me."
"What happened?"
"I tried to pole vault. I guess I have to give it up. Even sitting in the lab, it bothers me, in biology. I like biology. It isn't that!"
"Well, you have this wrist trouble, why didn't you tell Dr. X about your back?"
"Tell him! Why, when I went in with my wrist, my mother took me in, and she was talking to him. He was sort of feeling my wrist and talking to her. I don't know whether he knew I was there or not, but I guess he did, because he put a cast on. I wouldn't have told him anyway. In the first place, she was there. If I ever mentioned my back, she would have been talking about it from now until doomsday. Anyway he didn't ask me anything."

This doctor is a good friend of mine, very interested in kids, and very competent, but he did not handle this boy very well. We have somehow got to get across to these young people that we are interested in *them*, that we are not just a fellow who slaps on a cast or gives shots.

So we have set up a special place for them, and we have tried to make it obvious that we are interested in young people. For instance, we have a receptionist who never worked in a hospital before. One of the first ones we had was excellent. She came in wanting to get a job from me. "Ever work in a hospital before?" "No." "You're hired!" I did not want anybody who knew all the things you have to know if you work in a hospital. She had had previous training as a complaint operator for the telephone company, and she had the sort of voice that turns away wrath. She was very attractive. She was the sort of person Sherm Little would have sat down and talked to!

But this is the most important person in our whole clinic. This is the first person who sees our patients. This is the person who says, "Hello, Billy, it's good to see you," instead of, "What are you doing here now? You were due here half an hour ago. What do you think these doctors are?" We have been pretty lucky. Once in a while we get a compulsive one, but she does not last. She can't put up with me, and vice versa.

Next we try not to keep our patients waiting. They come by definite appointment. You do not keep people waiting in whom you are interested.

We see these boys and girls alone. You cannot spread your interest over a variety of people without diluting it. They should know who you are, just as Sherm said to the little girl, "I'm Dr. Little," or, if she is a little older, "I'm Sherm Little." This we do, too.

These are such simple matters, but none the less important. When we talk to our patients, we ask about their stomachs or whatever, but we also ask about the things that are important to them: school, home, their friends, the job they are looking forward to or the job they are doing, their future, and their hopes. These are what my lovely Irish patient said "are the *important* things." This fine fellow from Limerick came in with some complaint or other, which was handled rather easily, so I tried to learn from him what I should see in Ireland. "Perhaps the Round Towers and O'Connell Street and the Book of Kells." "Oh, yes, I know a little about these, but I want to know about the trout streams, and the mountains I should climb." He looked at me and said, "Oh, it's the important things you're wanting to be knowing about!"

It is the matters which are important things to these people which ought to be discussed. When you ask them about these, not only may you reveal the sources of anxiety, but also you will be getting across to them that you really are interested in *them* and in the things which interest them.

We are often asked how we get adolescents to talk. That's an odd thing to ask an Irishman, for it's one of the hardest things for an Irishman to do: the only way to get an adolescent to talk is to listen, to give him a chance to talk.

I don't mean by this that you sit there with the silent stare which some of our psychiatrists use to produce anxiety. These people have anxiety enough; I think we often forget how upsetting and anxiety-producing a visit to a doctor is. If you will show an interest in them, if you will sit there and ask about simple, little things, pretty soon they will get to talking. Almost the only trick we use is that of throwing back at them any emotion-laden word they use. If they come out with something like "lousy" or "stinks" or "battle-ax," we tend to repeat this, not with shock, not with surprise, but just so that they will continue on that particular topic.

We do a physical examination and we do laboratory work, at the first visit. At the return visit we like to talk to them about these things. We are not asking their opinions or their advice. We are not expecting them to make decisions, but we do like them to understand what is going on.

This may sound a little as though we leave the parents out. I neglected to say that when these youngsters come in for their first visit, they have an hour's appointment. We first see the parents also for an hour, preferably on an earlier day, so that the youngster does not sit outside waiting during the hour it takes Mamma and Pappa to tell their story.

Then when our patient comes in, he or she has an hour. Then the

youngster comes back a few days later when the laboratory results are in, and we go over things with him. We may subsequently see the parents, but sometimes we do not; we may give them messages through the youngster or we may write to them or may call them up when the youngster is there, or we may say to the youngster, "I think it would help a lot if I talked to your folks. You can be here, if you want, or maybe in this case it would be better if you weren't here, but, roughly, this is what I would like to say to them, and this is what I would expect to get out of their coming in here." They almost always say, "Go ahead, anything is all right with me."

We make it clear that we are their doctor and on their side. But we are not on the side of sin, and we are not against their parents. You can be on their side without sticking up for what you know is wrong, and you can be on their side without tearing their parents or their school or anything else down. Often we have to try to interpret their parents' behavior to them. You can do this in a nice way. All of us have so few supports in this world, that I hesitate to tear any of them down. In general, rather than take them out of these homes and these schools, we try to get them to adjust within them. Sometimes there are homes and schools to which I don't know who could adjust, but we are certainly deliberate and thoughtful about any drastic moves. In general, we take the point of view that these adolescents are going to be up against a lot of adversity in life, and that these difficult situations offer an adolescent a good chance to learn to handle oneself.

Why do we manage our patients in this manner? Basically, it is only the way you treat anybody you really care for. When you really want to help somebody, what do you do? You invite him over to a corner where you won't be disturbed. You don't let other people interrupt or interfere; you don't brush off their worries; you don't tell them to forget them. You listen. You don't talk to somebody else at the same time. This is the way you would treat a friend. It has been going on over back fences and in bars for years.

We *have* to do this with the adolescent because this is the time of life when one is terribly interested in oneself. Call it, if you will, their terrific overconcern with themselves. This is the time when they are sitting before the mirror. They are trying to be somebody, trying to form their own ideas and their own personality. They are going to ignore and resist those people who are trying to force their ideas and their ways of living on them. And they are going to respond very well to the people who are interested in them and who apparently respect them, who seem at ease with them. All the time you are trying to get this across to them, they are sizing you up; they are observing your manner, your anxiety, your embarrassment, what you are like. Frequently I am embarrassed myself to have my secretary tell me that

the boy or girl who has just left seemed a little concerned about me, and mentioned I seemed a little tired today—an accurate observation, no doubt!—but I'm sorry when it shows through.

While they are sizing you up, and you are sizing them up, they will be quick to judge whether or not you are accepting them, and they will put you to the test many times. Does their leather jacket bother you? Does that knife that sticks out bother you? Are you able to accept them as they are and understand why it is they have the leather jacket, and not take this, or their dirt, as a way of saying that they do not respect you? They would not be coming to you if they did not need to wear a leather jacket or to carry the knife, or to wear the dirty clothes. If you have to say to them, "Listen, if you are coming in to see me, you are going to clean up," somebody else is going to be of more help to that adolescent.

I had a nice example of this recently. A daughter had been raising Cain at home: out late, dirty, refused to bathe, would come in and disgrace the parents in front of their important friends. They came in and talked to me about this, and I said I would be glad to see her, but she did not sound like the sort of girl who wanted to come in and see me. However, they set a date, and they did literally drag her in. There she was, in my outer office, in dirty blue jeans, hair uncombed, dirty face, filthy fingernails, dirty riding boots. So I greeted her with the usual, "Hello, I'm Ros Gallagher." She looked at me and said, "This is the last time I'll come in this damn place." "I often feel that way myself." By that time we were in the office. "What's cooking here?" I said. "Whose idea is this visit?" as though I didn't know. "Whose idea! That old battle-ax," and then she was off, and she went on and on and talked for an hour. "Well, why don't you drop in in a few days?" She said maybe she would. As she was going out she said, "I'm sorry about these boots. They dragged me down here and I didn't have a chance to clean them." The boots were important to her: she didn't want me to think that she went around in dirty riding boots. She hung her pajamas in the middle of the bedroom floor, but everything in the tack room was just right.

The next time she came back she had a dress on, an index that maybe things were better. This was an adopted girl, and she was taking out on her rigid, very cold foster mother all the feelings that she had against her own mother. It was her own mother she quickly wanted to get to talking to me about. What could she be like? She was vacillating in her picture of this mother between somebody who would be much younger and much more beautiful and much more loving, and somebody who had been just awful to her, or otherwise she would now have her.

What did I do to get the girl to come back? I didn't do anything. I didn't say, "What do you mean coming in here dressed like that?" I didn't say, "What is wrong?" I didn't pry. I didn't seem to be shocked or upset by her foul language. I tried to be more interested in her than in her language or her clothing. Perhaps she *felt* this.

I would like to mention some other things which I think it might be well to take into account about these youngsters when we are dealing with them. In the first place, these are people, they aren't problems, and all these things that we have been talking about, the great bulk of them, are processes, if you will, things, traits, needs that most young people go through, and which most handle by themselves very well, but might do a little better with some help now and then.

We have to watch out that what we see in the hospitals and what specialists see is not confused with what goes on in the world at large. I am sure you know I am not one of those people who think that all's right with the world. But I get fed up with all this doom and gloom talk. We should not be blind to the dreadful problems which exist here and there, but at the same time we should be aware of the good things that go on, and the great strengths these young people have. We should remember, too, that although all these problems arise, they vary in degree, and they vary among people of different cultures; furthermore, although we talk about adolescents being from 12 to 21, there are all kinds of different people and needs within that age period. There is a tremendous difference, for instance, physiologically, between the girl of 14 and the girl of 18. And there are big differences in their personalities and their needs.

I would hope, too, we would all remember, though we are talking about people of 12 to 21 years of age, that we need to keep in mind and know something about infancy and childhood, too, that we may understand better what is going on during adolescence, in which there is the reactivation of the patterns and the conflicts of childhood, and also the chance, I think the only good, last chance, to do something about these things that should have been straightened out earlier. Also, if we are to prevent the troubles which occur in adolescence and in adult life, we people who see adolescents must share our experiences with those doctors who care for younger people.

I would like to say a little about some of the things that concern these people. One of them, of course, is their *growth:* the ones who are too fat, too lean, too short, too tall. These things can be a great source of concern. Though we would give thyroid to some and testosterone to others and growth hormone to some others, I think it would be well for us to realize that most of these people are growing in what is probably the way that is best for them. However, in considering these young people, and faced with the very real problem of the youngster who is too short and is really concerned about this, one should take into consideration (*a*) the amount of anxiety he has; (*b*) his age (if he is under 16, I think you want to try hard to "reassure"); and (*c*) attempt to evaluate how far this patient has progressed toward adulthood. (If his skeletal age is considerably less than his chronologic age, particularly if the evidences of secondary sexual maturation are less than you would expect at the chronologic age, you would do well to wait.)

Furthermore, it is well to be sure these youngsters understand the difference between not being average and being abnormal. I think you do well not to have charts and percentiles and channels and graphs around. These they do not understand, and I am not too sure

all of us do, either. You might refer to these, but I would do it rather surreptitiously. If your patient is not average, you are in for a lot of explaining.

We have not had any surgeons here, and at this point I would like to say just a word about one or two surgical matters which come up in connection with this body concern of adolescents. One of these is *gynecomastia*. The little button-like things, these little tender areas, about which they often become anxious, usually go away within six months. But there are some boys who develop pendulous breasts. These children may develop worries about their masculinity, tend to withdraw, and may need more than reassurance. Reassurance and trying to get them to live with what they have should be tried, but if you have a surgeon who feels he will not leave them with a scar which will be more attention-getting than their original complaint, his aid should be sought.

Another surgical matter that often comes up is that of the *undescended testis*. This is something that I think the pediatricians should do something about, and not just wait for time to do it. These adolescents do not like being different, and this is one aspect of their anatomy that they are apt to notice. They develop sexual anxiety, and also are liable to trauma when the testis is not down where it belongs. Adolescence, when they are going through all their sexual adjustment, is a poor time to operate on them. Also there is the possibility of loss of fertility as time goes on. On the other hand, we want to be sure to distinguish between a real undescended testis and the high retracted testis that is going to pull up intermittently in the canal. After a thorough examination, I would rather not wait for the spontaneous descent that might occur when the androgen level goes up. After thoughtful consideration and careful examination, I would rather see these people operated on around eight or nine years of age.

I mentioned that *sex* is disturbing to these people. I do not think there is much to add except to remind everybody that this is the era of going from the homosexual feelings into heterosexual ones, and that there are times when youngsters behave in what parents and some other adults seem to think is a very unusual fashion. Sometimes their contemporaries feel this way, too, particularly toward the youngster who is a little on the esthetic side and who may be excluded from his group. Such chaps might eventually make a decent adjustment for themselves, but, if they feel rejected, they may be almost forced into making an unusual one; they are going to have companions of one kind or another. I would remind you, too, that one should take with a grain of salt any reports from an adolescent of an adult's homosexuality. They indulge in a fair amount of fantasy and, unwittingly perhaps, may get a good teacher, a teacher who shows a lot of interest in young people, into a

very embarrassing and difficult situation. I don't mean to imply there aren't within schools people who would be better elsewhere, but I do hate to see persecution of fine teachers on the basis of what was definitely adolescent fantasy.

One of the adolescent's greatest needs is for *acceptance* and for prestige. Without success, without happy experiences, they just cannot develop the confidence they badly need.

We talked yesterday about the importance of strengthening them, rather than resting them or restricting them, whenever possible.

We need to try to get parents to understand adolescents' vacillation between wanting to be dependent and standing alone. Doctors, who have a certain amount of prestige in the minds of adolescents, can be of tremendous help to young people at this time. Certainly we can be of great help to those youngsters who are not so fortunate in their families and parents. We can be an additional source of strength; they need more than the temporary supports they get from their bunch, their gang, their sorority.

The *physically handicapped youngster* needs a great deal of thought in this regard. These are the people who find it more difficult to get the successes and acceptance they badly need. Although all youngsters are faced with the problems of job and marriage, think how much more of a problem these young people have. I am thinking of the people with poliomyelitis, diabetes, epilepsy, hemophilia. What are they going to do about driving a car? Sixteen, as you all know, is the big date now, not twenty-one. And what about marriage? What about career? What job will be suitable for them?

These people need and can be given a great deal of supportive psychotherapy. Even though they perhaps do not have great ability and are not very verbal, there are many techniques in psychotherapy which do not require this. There is your support of them; there is your interest in them; and there is good old-fashioned hope which you can give them. This is an ingredient that has great therapeutic value. I was pleased to learn a short time ago that in its first year the Yale Medical School required a thesis of all its students, and that in 1838 one of these young men wrote a thesis entitled "Hope as a Therapeutic Agent." I think this is of more interest than some of the others of that era written on such topics as "The Flux." It surely has more permanent value.

Although these handicapped adolescents cannot achieve all they wish and do all things the way other youngsters without handicaps can, your interest in them, your understanding of this and of their problem, your holding out hope to them—and all this without your saying much—*can be* very, very helpful.

There are other sources of anxiety besides the few I have mentioned.

School is a major one. We talked a good deal about school yesterday, but I do not think we said too much about it as a source of anxiety and, therefore, of symptoms in the adolescent. A good deal was said about failure and the causes of failure, and a little about the emotional climate of the schoolroom itself. Certainly there is a terrific interplay of feeling there. Not long ago I saw a boy who had all kinds of laboratory investigation because of chronic recurring headache. The problem was that he was in a class with a teacher who was not only interested in him, but fatherly with him to an anxiety-provoking point. Removed from the proximity of this gentleman, he lost his headaches. This was a matter that he seemed unable previously to express or, perhaps, had not been given the opportunity to express.

Death is another matter that concerns the adolescent a great deal. The whole matter of how to handle and help the adolescent faced with death is fascinating. I have the feeling that we do little for, but can learn much from, those adolescents faced with death. The least we can do is not to leave them alone, even though we find it hard to be with them.

One other thing well to keep in mind about adolescents is their tremendous *capacity for change*. I am always trying to remind myself not to be too quick to make a decision, too quick to evaluate the seriousness of their complaint. A chap who seems upset today, whose illness seems bad today, may be very different in a short time. They do not have the set patterns which we adults have, and a little help may make a tremendous difference. I know we are always being impressed with the changes which occur in these young people. We have done something, but we can't believe we have done much.

I am sure that one of the most valuable ingredients in success with these people is just to take this interest in them. If they fall into our hands with cramps or acne, we may not do too much about either one of these, but we certainly have an opportunity to do a good deal about the accompanying tension in the home or school, or the worry about friends or a job. These are certainly things of tremendous significance in the business of their later leading effective and efficient adult lives.

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DISCUSSION

DR. JOHNSTON. Still time for that paragraph.

DR. GALLAGHER. Johnny, I wish I had that paragraph. I don't know how I could have left it out, but the fact of the matter is I did. So that this won't be just a little tête-a-tête here, Dr. Johnston refers to one of the most important textbooks on the bookshelf of the physician who would care for adolescents, a book by James Stephens, formerly of Dublin, entitled *The Crock of Gold*. For those of you who have not read its pages about a girl's coming into adolescence, I heartily recommend it.

This rambling discourse, I think, would be well followed by something more objective. If I can get my associate, Dr. Robert Masland, to say a few words about ulcerative colitis, which comes as no great surprise to him, I will have a chance to rest up a bit.

. . . Here through the sunny days the years had passed in a slow, warm thoughtlessness wherein, without thinking, many thoughts had entered into her mind and many pictures hung for a moment like birds in the thin air. At first, and for a long time, she had been happy enough; there were many things in which a child might be interested: the spacious heavens . . . ; the steep swing of a bird down from the mountain. . . . These things, and many others, interested her. . . .

Slowly there was growing in her consciousness an unrest, a disquietude to which she had hitherto been a stranger. Sometimes an infinite weariness oppressed her to the earth. A thought was born in her mind and it had no name. It was growing and could not be expressed. She had no words wherewith to meet it, to exorcise or greet this stranger who, more and more insistently and pleadingly, tapped upon her doors and begged to be spoken to, admitted and caressed and nourished. . . . She could not understand the touch that came to her from afar and yet how intimately, the whisper so aloof and yet so thrillingly personal. The standard of either language or experience was not hers; she could listen but not think, she could feel but not know, her eyes looked forward and did not see, her hands groped in the sunlight and felt nothing. . . . But she listened, not with her ears, but with her blood. The fingers of her soul stretched out to clasp a stranger's hand, and her disquietude was quickened through with an eagerness which was neither physical nor mental, for neither her body nor her mind was definitely interested. Some dim region between these grew alarmed and watched and waited and did not sleep or grow weary at all.—James Stephens: *The Crock of Gold*.

ULCERATIVE COLITIS

ROBERT P. MASLAND, JR., M.D.

The Adolescent Unit (in Boston) has had the opportunity to care for 40 cases of ulcerative colitis since 1952. Thirty cases are now under our surveillance; the other 10 are patients who have either reached 21 years of age or who came from another part of the country.

This has given us some insight into the problem of ulcerative colitis. This is a disease of unknown etiology and, thus, an open target for every discipline in medicine. It is a disease that all too often falls, by default, into the psychiatric realm.

Ulcerative colitis involves part of or the entire colon. Many of our patients have disease only in isolated areas of the colon. The onset may be at any time in life.

ETIOLOGY

In 1930 Dr. Murray, a psychologist at Columbia University College of Physicians and Surgeons, first suggested that the psychogenic aspects of ulcerative colitis were important. Indeed, his classic report indicates all too well that many of the cases of ulcerative colitis can be preceded by an intense emotional experience. Since then the psychiatric literature has been replete with diagnostic and therapeutic surveys from this particular angle. Nevertheless, this disease still remains one of unknown etiology.

In our experience, and I think it is best to speak from that particular angle, there are three factors which may precede ulcerative colitis. These are not presented as etiologic, but rather as precipitating causes. In about half of our cases the patient will tell us that he had an infection of some kind prior to the onset of the diarrhea. This infection

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may have been respiratory, it may have been gastroenteric, or it may have been some other infectious process.

Perhaps a third of our cases definitely have had precipitating emotional trauma: a sudden move to a different home, sudden death of a parent—things such as that certainly have precipitated disease.

The third group has had an insidious onset. This is the patient who has always been well and has never had any trouble with his bowels until some blood was noted in the stool.

CLINICAL MANIFESTATIONS

The primary symptoms are diarrhea and bleeding. When we see these patients at the Medical Center, they often have been sick long enough to have developed anorexia, weight loss, and fever. Tenesmus is another prominent symptom that we find in the adolescent with ulcerative colitis. These patients complain bitterly of terrific pain in the lower part of the abdomen, particularly in the rectal area. The pain often awakens them at night. This same symptom may occur, unfortunately, in school or in other social situations, and cause great embarrassment.

MANAGEMENT

Many of our patients are seen on an ambulatory basis, but we like to have most of them, if they have been seriously ill with the disease for any length of time, in the hospital for an adequate medical work-up. The primary things to be done are hematology studies, proctoscopy, stool cultures and barium enema.

When I first came to the Children's Hospital, most patients who were subjected to proctoscopy were anesthetized. This may have been because they were in the younger age group. This is a totally unnecessary procedure in the older adolescent. Not only do we perform proctoscopy without anesthesia in the hospital patients, but we also do it as an outpatient procedure. We do not do it every time they come to see us, but only as a check-up, depending upon the progress of the disease.

While they are in the hospital, the other people that take care of the adolescent are just as important as the doctor. Good nursing care is imperative. The nurses can make or break an adolescent with ulcerative colitis. The doctor usually sees the patients for perhaps 10 minutes in the morning, and maybe he stops in on his way home in the evening. In the meantime there have been a host of house officers, technicians and ancillary personnel in and out of the room.

The nursing staff, if they want and are able to, can create a fine atmosphere for these young patients. Unfortunately, most nurses are

like the rest of us. They respond to the child who is well behaved. Some of these ulcerative colitis patients cannot be well behaved. They are too sick. They are depressed, anxious and demanding. It is not easy for a nurse to be accepting of a demanding patient.

I find at Children's Hospital, and probably this is true at other teaching hospitals, that the student nurse is the one who is apt to show the most kindness toward these young people. In one case I am certain the turning factor in the care of the patient was that one of the student nurses took time to fix the girl's hair and discuss the boy-friend.

The second thing that I would like to touch on is *symptomatic care*. Because we have a disease of unknown etiology, it might be too easy, too glib, just to write a series of orders on the order chart and let it go at that. I think the doctor must take time to carry through on the symptomatic care of the ulcerative colitis patient, that is, be certain he is getting enough antispasmodics, be certain he has enough paregoric, and be certain he has sedatives to help him sleep at night.

Nutrition is important, and it would be unfair if we spent three days under the sponsorship of Indiana University and Mead Johnson & Company not to mention one of their products, namely, Sustagen. We know that these patients are in negative protein balance, nitrogen, calcium and phosphorus balance, and they have to be given added nutrition. To help combat this negative balance we insist that these patients spend time out of bed. We do not use a particular routine exercise. Some of these patients have been in bed two or three weeks because their doctor thought that complete bed rest would rest the bowel as well as the patient. Unfortunately, the patient gets too much rest and, as a result, loses valuable time in building up body stores.

The *sine qua non* is the confidence of the doctor. If the doctor is not confident and shows his anxiety—in whatever manner he expresses anxiety—the patient will soon feel this apprehension. It takes courage to treat ulcerative colitis, because you know you are dealing with a disease for which there is no "magic drug." A gloomy, sad-faced doctor can probably do just as much to push these patients toward a drastic procedure, such as surgery, as anything else. I am not saying that the "Smiling Jack" is going to cure them, but it certainly does help if the doctor exhibits confidence and hope for these patients in the early stages of the disease.

About 70 per cent of the patients, a little less in our series, will have cyclic remissions and exacerbations. These patients are never very ill. They do not have profound anemia. They can carry on as outpatients and are able to continue with school and social activities. We do not restrict them from exercise. We do not talk to these patients about surgery because we think that they will probably either live long

enough to have the benefit of a future specific agent—if their bowel is not too fibrotic—or they may go on and have a complete remission of many years. This is hopeful treatment.

The 20 per cent whom we characterize as the chronic, continuous type are the patients who, in spite of persistent treatment, continue to have low-grade, smoldering disease; fever, anemia, tenesmus and blood in the stool persist.

With these patients we use *steroids*. The initial dose of cortisone is 200 mg. a day for a 2-week period, depending upon how the patient tolerates the drug. Other physicians prefer to begin the treatment with ACTH. In our clinic cortisone by mouth, if they can take it, seems to have been just as effective.

The final group, the 10 per cent who have acute fulminating disease characterized by great toxicity, should be seen by the surgeon and, as a lifesaving measure, will probably have a colectomy and ileostomy.

What are the *indications for surgery* in our experience? The first and foremost, of course, is the threat to life. You cannot vacillate if you have a patient who is hemorrhaging; you cannot vacillate if you have a patient who has had a perforation or is toxic. They are in mortal danger.

A second indication is chronic invalidism: patients who have been treated in the chronic, continuous stage too long. We had an example of this recently at the hospital. A boy had been on a farm in Vermont for about four years with ulcerative colitis. At the age of 14 years he was 4 feet 2 inches tall and weighed 60 pounds. It was a tragic case because, even though he had a colectomy, one wonders how much skeletal growth he can achieve. His bone age is approximately two or three years behind his chronologic age, and this is a hopeful note.

Carcinoma is an indication for surgery. In our experience we have not seen this as a complication. It is reported by surgical clinics that approximately 5 to 10 per cent of the patients who have ulcerative colitis for many years will probably develop carcinoma. This has not been an indication for surgery in the adolescent.

Pseudopolyposis, which is demonstrable by proctoscopy and also by barium enema, has been an indication for surgery. I am not sure whether it is a valid one. When we do see it, we are more inclined to go ahead with the operation.

The two cases of pseudopolyposis that we have seen had other indications for surgical intervention. One had chronic invalidism; the other had persistent rectal hemorrhage.

Psychotherapy in the treatment of ulcerative colitis belongs properly in the hands of the interested, capable physician. He may be an internist; he may be a pediatrician; he may be a general practitioner; he may be a psychiatrist, if the psychiatrist is willing to participate in the

medical treatment. It is the person that treats the disease, the *confident* person. I think most writers in the literature will agree on this particular point. Groen in Amsterdam, an internist who works with psychiatrists and has written a great deal about this subject, believes that the good medical physician, and not the psychiatrist, should handle these cases.

We have one boy who is a *cause célèbre* around the Medical Center. He was a schizophrenic for many years and developed ulcerative colitis at age 11 years. He was sick enough so that a colectomy was necessary. The colectomy did not cure the schizophrenia. Too many of the house officers, I think, have been exposed to this patient as the prototype of all ulcerative colitis patients. I say this because we have had a number of patients in the hospital who have not been like this boy, and the house staff is always amazed that a child with ulcerative colitis can be a nice person. In fact, I was told by one resident surgeon that Eileen, who looks like a little princess, was too nice a person to have ulcerative colitis. She should have been a little meaner, I guess!

The psychiatrists working with us in the clinic are in agreement that if the doctor feels comfortable with a patient with ulcerative colitis, he will be the one to care for that particular patient.

There is an aspect about the care of ulcerative colitis which we must all remember: this is a team job. I am not, and I do not think any of us in the adolescent unit are, "antipsychiatry." I say this in all sincerity. The physician who cares for patients with ulcerative colitis cannot care for them intelligently in every case without the help of other colleagues. We want to work with the psychiatrist in the care of this problem and are grateful for their contributions.

The third member of the team should be the *surgeon*. I do not think the surgeon should be called on day "minus zero." Surgeons are unhappy about this, since they do not like to operate on patients just before the final stroke. We like to have the surgeons come in and see the patients while they are in the hospital. We do not like to have them come in right out of the operating room. This, of course, does not have a good effect on the boys or girls. But they may come in when they are on rounds, and introduce themselves. The patients have been told ahead of time that this kind of thing is done in the hospital, and that, although this is probably not going to be a surgical problem it is nice to see and meet the surgeons.

Surgeons in some centers are dogmatic and didactic about the care of ulcerative colitis. Many prominent surgeons feel that the only treatment for ulcerative colitis, no matter what stage, is surgery. It is true that surgery does cure this disease. It removes the offending area, but it is drastic treatment. It has been said that although one may wax lyrical about ileostomy, there is nothing poetic about having it.

We like to have the surgeon operate when operation is indicated. We would like to have him describe to the patient exactly what he is going to do. We have help in this area. There is a club, an ileostomy club, with which you may be familiar. It is called the Q.T. Club. This club was started at Mount Sinai Hospital in New York. These ileostomy patients have banded together in various parts of the country. We have a club in Boston, and there are others in large metropolitan centers. Club members are available day and night to come and see patients before and after operation. It was inspiring and very helpful for Eileen, who was to have a colectomy, to have Rosemary come in to see her. Rosemary had had her operation two years previously and could show how well she was—that she looked all right in clothes and did not have to wear great big, fluffy skirts.

It is helpful to have the nurse, and perhaps the Q.T. Club member, instruct the patient in how it will be to have an ileostomy appliance and to put one on before the operation.

Diagrams to show the patient exactly what is going to occur are invaluable regardless of whether the doctor is an artist or not. Often these patients have absolutely no idea of how they are going to be handicapped.

The first question that is asked is, "Do you think that, after it is over, it will be possible to hook me up again?" In other words, reunite the ileum with the rectum. We do not make promises. In fact, we play down this particular question. We are convinced that it is not feasible in the adolescent group, as it is with the younger infants, to do a simple ileostomy as the initial procedure. The surgeons do a complete colectomy. If the rectum is free of disease, it is not excised. Perhaps at some later date we can report to you about successful anastomoses of the ileum and the rectum. In the literature this particular type of reunion has never been a happy one. Usually the rectum will break down, and the patient is subjected to further operation.

Dr. Walter Palmer believes that in few conditions is there such need for the art of medicine. Indeed, I think it is the skill of the physician, and not the drugs, that is all-important in the care of patients with ulcerative colitis.

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DISCUSSION

DR. GREEN. Dr. Solnit and I are pleased to hear Dr. Masland speak on ulcerative colitis. We have been interested in this disease for a number of years. Our experience is not as extensive, but I would guess it is as intensive. I say that because no one can be a physician for children with ulcerative colitis unless he has an intensive experience with them. The doctor must recognize this before he assumes the tremendous responsibility of their care.

In the management of these patients, children who have a life-threatening disease, *continuity of care* is a principle of great importance. Many of these children do not do well in teaching hospitals because this principle is compromised by the residents' rotation schedule. We believe, as Engel has written, that continuity of care should be arranged for, in a way, even when a doctor leaves town, by giving the patient a telephone number where the doctor can be reached. In our experience, the child never calls in this situation, but he has the assurance that he *could* if he felt the need.

Preparation is a second principle that we think to be of great importance. We spend much time preparing these children for changes in medication, for changes at school, and the like. We have had experiences which have illustrated dramatically the importance of such preparation. I remember very well one child for whom I decided, near the end of one interview, to prescribe cortisone. I picked up the prescription pad, wrote out quickly the prescription for cortisone, told him to start taking so many tablets a day, and added the statement that I thought he ought to have this medicine. About three hours later, as I was about to leave the office, I got a frantic call from the mother, who said that the patient had started his medication, and that he was in terrible shape with vomiting and nausea. Both she and the child thought these symptoms were due to the new medication. So I had him come right back, and then I did what I should have done previously, that is, prepare him for the medication and explain why I had decided to give it to him at that time. Thereafter he made striking improvement and went on to gain 20 pounds in the next few weeks.

I think something might also be said concerning the parents of these children. They are often pessimistic, worrisome, demanding and anxiety-ridden. They are, at times, difficult to deal with.

We are very pleased that Dr. Masland referred to the importance of nursing care and the contributions of other personnel in the ward management of these children. We believe that when these patients are on the wards, the physician should attempt to orient the nursing staff, interns and others to the principles of their care. These are children who may be passive and, at times, demanding. They often do

not seem interesting to the ward staff until one begins to know them very well.

We also think that physicians who deal with these children must be interested in small details of their comfort. If the child wants another pillow, the doctor can go out and get him another pillow; if he wants hot tea, the doctor can have this brought to him. It is our thought that this is part of the medical care for these patients.

We feel that the ideal arrangement in the management of these patients would be characterized by close liaison between pediatrician or internist and psychiatrist. I think it depends on each situation as to who would be the most important physician for the child. In our experience, the child know pretty quickly what role the pediatrician has and what role the psychiatrist has. If the pediatrician is comfortable about his role, and the psychiatrist is comfortable about his, if these two are not rivalrous and if there is adequate communication between them, this arrangement works out beautifully. I think that sometimes the collaboration breaks down because the pediatrician does not really want the psychiatrist to be in on the case. If so, the pediatrician must be aware of how he feels and be supportive to the parents and child in going through with psychotherapy.

Dr. Gallagher. I am glad you talked about that because the reason we decided to include ulcerative colitis today was not for ulcerative colitis itself, but that we think there are few other illnesses that can teach the doctor so much and which are better suited to the sort of training we are trying to give. It is certainly a very demanding illness, and it is very rewarding when you can work this sort of thing out with doctors from various disciplines all striving to help this one patient.

Dr. Richmond. This group is to be congratulated on its well balanced presentation of this problem. Studies of this illness, as you know, are often associated with hyperenthusiasm for one approach or another, depending upon the experience and discipline of the person directing the study.

When we established our psychosomatic unit at the University of Illinois some years ago, we were struck by the frequent onset of the disease in the prepubescent years. I think at that time we developed, as one does in a referral center, and as Dr. Masland pointed out, a distorted view of the severity of this disorder.

We were concerned mainly with the psychiatric aspects of the illness and as pediatricians worked collaboratively with the psychotherapists. In a number of instances, over many years of collaborative therapy, we have been able to see a good deal of improvement in our patients. Does this mean that this is predominantly a psychiatric disease? Not

necessarily. I think we are dealing with multiple factors which may play a role etiologically. Thus without defining a specific cause, one minimizes stress in whatever way seems feasible. It may very well be that there is some constitutional predisposition that renders these youngsters vulnerable, at times, in their bowel; thus, in a vulnerable person, an adverse experience—whether it be infection or psychological—may precipitate symptoms.

It is not uncommon for some clinicians to deny psychologic factors in the genesis of this disease. This often reflects the fact that they do not look with the same intensity and curiosity of the psychiatrically oriented groups.

I have been particularly struck, in the children we have studied, by the significance of separating experiences. These separations may be rather subtle. There may have been the loss of a grandparent to whom the child may have been very much attached. Not uncommonly there is summation of a number of separating experiences; for example, we recently studied a child who had within a three-week period experienced the loss of a favorite grandparent by death, the hospitalization of an uncle, and the father's leaving the family for several weeks because of his occupational responsibilities. The child, for the first time, then experienced diarrhea with bleeding. She had mild symptoms for some time thereafter, only to have a severe attack when both parents went off on vacation, leaving the children in the care of a relative stranger.

Thus whether or not one finds psychologic problems is a function of whether one looks. Even though we find them, this does not mean they are the sole determining factor; but when we identify these problems, we have some responsibility for endeavoring to do something about them.

I feel, as Dr. Masland does, that the physician who can deal with medical management is in a very influential position in the management of these patients. I think some psychiatrists have tended not to do well in caring for some of these patients because they are anxious about the biologic aspect of the disease. If they are anxious about the patient's physiologic problems, this will be communicated. Also if the pediatrician is unduly anxious, this will come through. I think the point which was made is extremely important: The doctor who can really feel confident about being able to deal with all the manifestations of the disease and its complications is in a position to be very helpful to these children. In other words, the doctor must be less scared than the patient. This is not easy because of the precarious condition of the more severely ill patients.

In a subtle way psychologic factors are observed to play a role on a

ward service on which the medical staff rotates. These patients generally do poorly at the times when staff rotations take place.

In treating children it is, of course, important to deal with the anxiety of the parents. Here pharmacologic help can be significant. I was interested in your emphasis of a point which is emphasized all too little. That is the tenesmus and the cramping that these patients experience, particularly early in the disease, when they respond to almost every urge to defecate. This is particularly disturbing to the parents; they hear the child getting up at night, and they feel that the child is not getting enough rest, and are apprehensive about this. I have found the use of codeine under such circumstances particularly valuable. I do not think it does anything other than raise the threshold for the perception of the rushes and cramps these patients experience. Thus they respond to fewer stimuli. I think this is important because they can become fatigued just rushing to the bathroom frequently.

I would also like to mention, since those of us in teaching centers tend to see the severe cases, that we should be aware of the many mild cases that do get managed often by the general physician, and do reasonably well. In recent years I have found myself consulting with the physician who is managing the patient, rather than taking over the care of the patient. The anxiety of the physician is sufficiently relieved when he knows he can talk with someone who has had a good deal of experience with this disease and is willing to take over if progress is not satisfactory.

We have been concerned in recent years that in rare instances, in patients with severe, intractable disease, we have deferred operation too long. To defer the surgical procedure until the patient is preterminal is unfair to the surgeon.

However, I think the emphasis on colectomy as a prophylaxis for carcinoma is unfortunate. I had one surgeon recently say a child who has had ulcerative colitis for 5 to 10 years is a child who should have colectomy prophylactically. We have seen a number of patients who have gone many years beyond this with no evidence of any malignant change, and thus we disagree. It would be unfortunate if many children who have this disease in mild but chronic form were subjected to colectomy. In fairness to the surgeons we should recognize that they tend to see predominantly the severe, intractable cases.

DR. GALLAGHER. In the afterglow last night we tried to decide what topics we might talk about this morning. One of them Dr. Masland has discussed. We picked another which we thought was appropriate, since so many of us have to deal with it so often. Dr. Heald is going to talk to you about obesity.

OBESITY IN THE ADOLESCENT

FELIX HEALD, M.D.

Obesity is one of the major health problems in the United States. Authorities are concerned about its relationship to cardiovascular disorders as well as to diabetes. Whether obesity represents only one facet of a metabolic syndrome or operates as an entity in itself remains to be determined. In adolescence, vanity represents the chief source of concern about obesity. This is especially true of girls in their teens, when bodily concern is intense; girls at this age do not want to be different or stand out in the crowd. To be obese is to be unattractive and undatable in the American culture. The all-American girl is trim and slim without an ounce of excess fat. This image is so important to women in this country that it has spawned a multitude of weight-reducing schemes and salons. This is testimony to the physicians' paucity of basic knowledge about obesity.

Our lack of knowledge in this disorder may well have resulted from our smug conviction in the past that excess fat results primarily from overindulgence in food. This plus the failure to approach the problem from a multi-etiologic point of view has stifled our understanding of obesity. Fortunately, current intensive investigation of obesity by physiologists and others is correcting this situation.

Obesity is a common problem in adolescence. Its incidence may reach 10 to 15 per cent in childhood and adolescence. More likely than not there is a family history of obesity. If one parent is obese, 40 per cent of the offspring will be overweight. Eighty per cent of the children will be obese if both parents are overweight.

It is important to determine the time of onset of their obesity. It has been our impression that the earlier obesity manifests itself, the more difficult it is to treat. Did obesity begin in early infancy, at age five to

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six, or in the preadolescent period? Not infrequently one will find that the onset occurred after an operation or prolonged illness.

One also finds in the history that there have been varying attempts to correct this problem. These attempts usually have consisted in being handed either a diet sheet or a pill, or both. The percentage of failures using this—or any other method of treating obesity—is impressively high. It is not uncommon to learn that within the family constellation considerable bickering and restrictions over food have led to family tension and unrest.

Certain areas are important for the physician to investigate. First, find out when the patient became concerned about his or her overweight and when he felt fat. Determine with some degree of accuracy just what his caloric intake is. This can be done by utilizing the American Dietetic Association Manual for Diabetics and calculating food exchanges.* Although this method may not be highly accurate, it will suffice for clinical purposes.

It is not uncommon for the patient eventually to ask, "Doctor, why is it that my friend Susie can eat twice as much as I do and yet she is thin as a rail?" We, of course, don't have an adequate answer to that question.

We often pursue the matter of activity. These children are often inactive. Why are they inactive? Is this partly a physiologic syndrome? Is this partly an adaptation to disturbed physiology or disturbed psyche? On the other hand, one sees certain obese children who are active, and it is difficult to explain their storing of fat by either overindulgence or lack of exercise.

In the physical examination the diagnosis of obesity is made by inspection. As a general rule, nothing abnormal is found—no disorder of the endocrine glands.

The concept that obesity is due to overeating on the part of the patient because of unhappiness and emotional upsets is due primarily to two factors. Early in the 1940's Newburgh[7] made the statement in his treatise on obesity that obesity occurred only when energy intake exceeded output. This is still true. Unfortunately, this has become confused with, and come to mean, "overindulgence in food compared with their contemporaries."

Second, the work of Hilde Bruch,[2] so important in pointing up the fact that emotional factors can be paramount in certain cases, again has been taken out of context and applied to all eating, that is, that all people overeat because they are emotionally disturbed. These two themes have been the basis for the oversimplification of this problem.

What does the average adolescent eat? Actually, there is some in-

* Copies may be purchased from the American Dietetic Association, 620 N. Michigan Ave., Chicago 11, Ill.

formation on this point, but the data certainly are not as good as one would like to see. Some work was done in Iowa by Eppright[4] on 7-day diet records on children between 10 and 16 years of age. Total caloric intake (2300 to 2400 calories) in girls reaches its peak about the time menarche occurs. Thereafter caloric intake in girls decreases slightly. On the other hand, caloric intake in boys rises sharply so that at 16 years of age they are eating 3400 calories per 24 hours. Activity plays a role as well as increased muscle mass in the male to account for the difference. This points out (1) the sex difference and (2) the fact that one must keep in mind at what stage these patients are in their development, nutritionally and physically. When you give a 1500-calorie diet, one should have some concept of the total caloric intake that you are attempting to decrease to the 1500-calorie level.

With this as a background, the next question is: Do obese adolescents really overeat?

Tables 2 and 3 confirm the fact found in another study, done on adolescent girls in Boston by Johnson et al.,[5] which showed that obese girls ate significantly less than their controls. Our study[8] was done at

TABLE 2. *Average Daily Food Intakes during 8 Weeks at a Summer Camp of Obese Adolescent Boys and Paired Nonobese Controls Obtained by Research Dietary Interview*

	NUMBER	CALORIES	PROTEIN (GM.)	FAT (GM.)
Nonobese group	14			
Mean		4628	179	223
S.D.		810.9	37.4	46.9
Range		3580–4965	127–278	148–317
Obese group	13			
Mean		3430	134	166
S.D.		617.2	27.8	36.8
Range		2295–4605	84–175	100–228

S.D. = standard deviation.

TABLE 3. *Average Daily Food Intakes during the School Year of Obese Boys and Paired Nonobese Controls Obtained by Research Dietary Interview*

	NUMBER	CALORIES	PROTEIN (GM.)	FAT (GM.)
Nonobese group	14			
Mean		3476	129	174
S.D.		625.8	29.4	32.0
Range		2680–4815	101–182	134–236
Obese group	14			
Mean		3011	111	146
S.D.		580.0	18.0	30.6
Range		2275–3865	92–139	95–189

S.D. = standard deviation.

a summer camp. A group of boys were divided into a control and an obese group. The control group's average food intake during the school year was 3400 calories. In the obese group this was 3000 calories. At the camp, as one would expect, the caloric intake increased. In the nonobese, who were much more active, the mean intake went up to 4600, while the obese group went up to 3400. Again, the obese eat less as a group. Therefore this problem is not a matter of total calories. I should also point out that the obese group were significantly

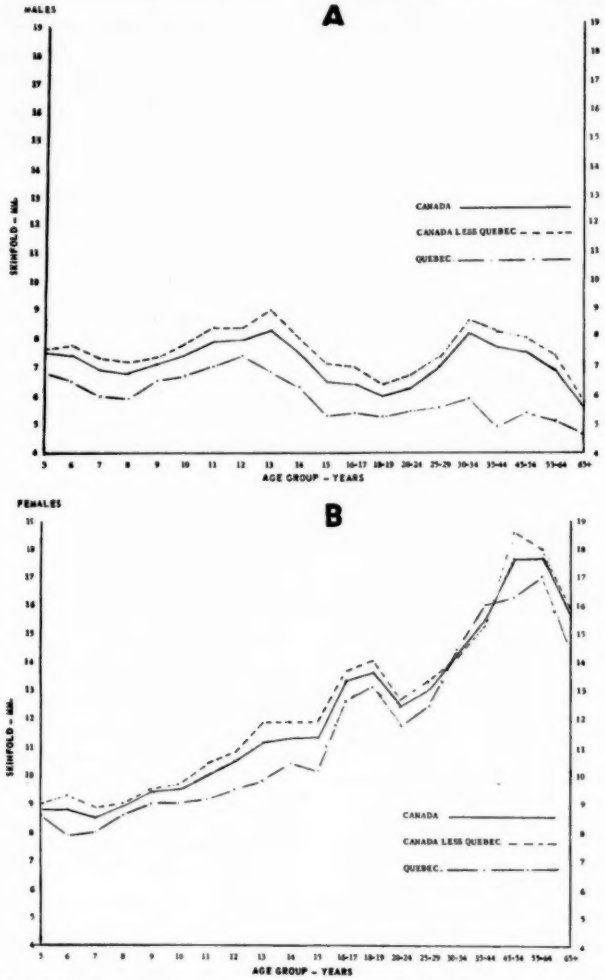

Fig. 13. Skin fold—average for given age. (Canadian Bulletin Nutrition, Vol. 5, No. 1.)

less active than the nonobese group, which probably explains, in part, this great difference. So it seems now that there is evidence at least to indicate that, in terms of total calories, obese kids are not stuffing themselves.

Keep in mind that the amount of body fat at any given age in childhood is not a constant one, that it may vary significantly in adolescence, and that there is marked sex difference. Figure 13 shows the skin folds determined in a large population study in Canada.[3]

The male's subcutaneous fat is relatively constant from the age of 5 to 65 years, but may increase somewhat in middle age. Early in adolescence the male puts on fat, but after the adolescent growth spurt, body fat decreases again.

In contrast to the male, subcutaneous fat in women rises sharply during adolescence and then continues on through life. The thing that is particularly interesting as far as the adolescent girl is concerned is that in contrast to the males, who lose significant amounts of their total body fat from age 12 to 17, the females seem to add subcutaneous fat. It should be mentioned that subcutaneous fat thickness changes may not parallel changes in total body fat.

Although a good deal of early work on hunger was done by Cannon, only recently has there been vigorous investigation into the regulatory mechanisms of what we eat. Brobeck[1] and Mayer[6] have investigated the influence of various neurogenic and metabolic factors on the hypothalamus in regulating appetite. Certainly the hypothalamus, where a good deal of this regulation seems to occur, can be influenced by factors, such as emotional tension, other than physiologic ones.

Until recently little attention was given to the question whether there might be a metabolic defect which would cause fat to be stored more rapidly in one person than in another. This is certainly true in laboratory animals, and there is early evidence that this may be true in human beings. There may be an obligatory mechanism of a metabolic nature in which the human being or the animal stores fat at a higher rate than the average person.

Little attention has been paid to the role of the subcutaneous fat as a metabolic entity and its relationship to obesity. It is not the physiologically inert mass that most of us have been taught. Recent work suggests that it may be metabolically highly active tissue. There is evidence that this is directly concerned with glucose metabolism and with incorporation of glucose into fatty acids.

It is also true, in terms of causation, that inactivity plays a role in a significant number of children. Activity is the great variable of energy expenditure. This fact had been temporarily obscured in considering both the reasons for and the treatment of obesity. Mayer more recently

has emphasized its importance. The question as to why these children are inactive needs considerable investigation.

We are now faced with the clinical problem of the obese adolescent. What approach does the physician take in handling the problem? Do you give a restrictive diet? Do you give drugs? Do you tell the parents and patient that nothing can be done? It seems to me there are several things the physician must keep in mind. The physician must weigh all the factors, including a thorough knowledge of the adolescent's stage of growth. One must also know a good deal about him as a person. There are some girls, for instance, who are sufficiently upset emotionally that obesity is a minor problem. It would be dangerous to go along with parental requests and give them a diet. Some of these adolescents need primary attention to their emotional problems.

The physician can use the life history of obesity as an aid in charting the therapeutic program. For instance, if a child has been obese since infancy, he is more apt to be refractory to treatment. If the child has put on weight just prior to his adolescent growth spurt, one would be increasingly reluctant to do anything in terms of restricting food. This is more related to the physiologic increase in body fat which occurs in boys. As a general rule, explanation and observation is all that is needed in such cases.

The physician must also keep in mind that this is a period of growth. That these children are obese does not mean they are adequately nourished. There is evidence that they actually may be in negative nitrogen balance. If the physician restricts food intake, he is doing so at a time when the adolescent caloric, protein and mineral demands are large. If you are going to restrict, you have to consider what nutrients are safe to limit.

The physician must set realistic goals for himself as well as the patient in terms of what he hopes to achieve with treatment. That is, he may have to be content either to stop the progression of weight gain or to modify it slightly and not be disappointed if a tremendous weight loss does not occur.

Finally, there is the question as to whether he or she is ready and wants to lose weight. This is very important. If the adolescent is indifferent to this or not interested, you may do him a great disservice by setting up a situation in which the family can get into a good scrap over food.

Once the physician is convinced that the adolescent is ready, and that, medically, no harm will come from depriving him of nutrients, then a diet can be discussed with the patient. In discussing diet the physician should be aware from what caloric level he is cutting back. You cannot take a patient eating 3500 calories and expect him in 24 hours to reduce his intake to 1500 calories and stay at this level. Reduc-

tion from 3500 calories to 1500 calories should take place in a stepwise fashion.

Our own simple approach to this is that we do not tell these kids what they *cannot* eat; we tell them what they *can* eat. We strongly urge that the diet be high in proteins and moderate in fat. The only thing that I personally feel strongly about is that we should be fairly restrictive about carbohydrate intake.

It seems to me that if you sense the adolescent is going on a diet anyway, you might as well supervise it and see that he does not get into trouble by eating the wrong kinds of nutrients. If he has adequate protein and is getting adequate calcium, the chances are he won't get into difficulty.

Just one more word. It is not uncommon in our experience for normal girls to want to lose weight. The adolescent girl who is tremendously concerned about her body and wants to make sure she is trim and slim frequently fools around with her diet and so ends up eating an inadequate amount of food. Not a week goes by without seeing a girl who thinks that she is overweight and needs to reduce.

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DISCUSSION

DR. SOBEL. I used to think obesity was a simple problem, more difficult to solve than to understand. However, there has been recent work in England showing increased corticosteroid and 17-ketosteroid excretion by obese children.

We have now been confronted with two children in whom it has been difficult to make a decision between mild Cushing's syndrome and simple obesity. Adults with Cushing's syndrome, on the whole, tend not to be obese, in terms of actual weight increase, but rather in terms of body composition, and especially distribution of subcutaneous fat.

Dr. Elsa Paulsen has investigated one of our overweight patients by trying to find out whether there was a normal diurnal variation in plasma corticosteroid concentration, thinking this might give us a lead. In this series of one patient the diurnal variation was entirely normal; so we do not have a lead there.

I agree with Dr. Heald completely that one cannot and should not make any effort to induce weight reduction in an adolescent who does not wish to go along with the program.

I talked with one 10-year-old boy who was very much overweight, a child with congenital adrenal hyperplasia. In the beginning we made the error of offering him a diet and, to some extent, discussing with his mother the fact that the things she was offering him to eat were accentuating his problem. He was a very intelligent boy. One day he said to me, "You know, people are different. Some people like to eat a lot and be fat, and some people don't care what they eat and they are thin. I like to eat, and I like to be fat." So, of course, I had to give up.

He has actually, recently, begun to slim out entirely on his own and said he simply is less hungry than he used to be. One reason he might be a little less hungry is that we changed his therapy from hydrocortisone to 9-alpha-fluoro-hydrocortisone, which he can take as a single daily dose without having peaks in plasma steroid concentration as he did on hydrocortisone therapy. If this is what accounted for the reduction in appetite, it would be on the basis of a very small change, really, since he showed no evidence of overdosage before we made the change and shows no evidence of underdosage now.

If that is true, it may well be that in some overweight children, especially those with chronic anxiety, there is actually an abnormality in corticosteroid production. This would, of course, not mean necessarily the presence of organic adrenal disease, but, rather, that the adrenal was responsive to the child's day-to-day situation.

I have also been very much interested in the different ways children

may respond to the same family situation. We had one family in Boston which consisted of one tall, overweight boy, one abnormally short, thin boy, and one boy of average height and weight who had food phobias. They had all been raised by the same paranoid mother, who had started out with the first child, fearing that whenever he cried, the neighbors were talking about her and about how poor a mother she was. So she fed him every time he cried. He was a passive fellow who ate, and became very much overweight. The second boy did not respond this way; he responded by rejecting the food and developed chronic anorexia. Why the third one developed the food phobia, I do not know. If he were reading a newspaper account about an accident or something unpleasant at the same time that he was eating a tuna fish sandwich, he would never eat tuna fish again. He made associations of this sort so that he had come to a remarkably restricted diet.

Dr. Heald, I notice, did not tell us anything about his success rate. I would say mine is remarkably poor. We had one girl come in recently weighing about 240 pounds and only a little over 5 feet tall. She was accompanied by an apparently extraneous youth, as well as her mother. The boy turned out to be the boy friend, who planned to take her to the prom in June; he had come along to see if she could get slimmed down in time. This might be fine motivation, but the goal was one she was obviously not going to reach between February and June.

I really do not know how to handle the problem, other than to reinforce the child's desire to lose weight, and to have it handled by the child, without participation of the parents unless they are also overweight, in which case one can try to make a group project of weight reduction.

I have tried to persuade mothers not to have tempting foods in the house. This is probably more important for young children than for adolescents, who can go out and get what they want anyway. Certainly giving lectures does no good. Telling the mother, as we did with one very overweight seven-year-old boy, that she was doing him no favor and could make life much easier for him and herself, and what sort of foods there should be in the house to achieve the best results, led to her saying, "I'm going right home and make a strawberry shortcake."

How do you do it?

DR. HEALD. I just want to say one word about success. I think it depends on how you define "success." If you define success as reducing adolescents down to what we feel is normal body composition, I think our success rate is about zero. This is not entirely true, but I say that to emphasize the point.

In terms of relieving some of their anxiety, helping them to understand the problem more, and helping them with problems unrelated to obesity, we are, perhaps, a bit more successful.

I am reminded of a girl seen just this week. When I first saw her 2 years ago, she weighed 180 pounds. With the help of physical activity and modifications in her diet, she now weighs 163 pounds. The last time she was in, she did not mention the weight. We discussed something else. What I think is important is that we do have some success if the patient wants to lose weight. In many cases what is involved is a holding action until the child reaches the late teens or early twenties, when the motivation may be greater. We do something for them when we try to help them understand this problem and whatever other problems they may have.

DR. GALLAGHER. I think maybe Dr. Heald is a bit too modest about that. It seems to me this is the point of so much that we do. If one talks only in terms of success or cure, I think I should have gone out of business years ago. This is almost like limited goals, short-term psychotherapy—you do not cure anybody. I guess what you do is enable them to live more effectively with what they have.

I tend to make a pretty oblique approach toward the fatness. It probably bothers me, so I avoid it! Instead, I concentrate on trying to get these youngsters to live with themselves better, get along with people better. I do not suggest they reduce their intake of food, particularly if I feel food is what they need until they can get something else from me—just as I do not take the leather jacket away from them until I give them security from myself. I tend more to think of activities they can get into. After all, it is the goose that is penned up that puts on fat. If I can get them running around, maybe I have half a chance. Also it is the unaccepted and insecure who need to eat; maybe a new activity will bring success and acceptance.

I am sure there is a great deal one can do for these people. What I would hope we would not do is focus entirely on their fatness and just give them a reducing diet. I am sure that is not the way to handle it.

Food intake is important, however, and I might mention the recently published teen-age diet book by Ruth West,* who is also the author of *Stop Dieting! Start Losing!*

I trust you all noticed that Dr. Heald made a distinction between a so-called overweight youngster and the youngster who was overfat. Often the distinction is not made.

DR. JOHNSTON. I think this is a place where the adolescent clinic is drawn into the problem too late. Granted a number of different fac-

* Ruth West: *The Teen-Age Diet Book*. New York, Bantam Books, 1959.

tors as causes of obesity, there will be a group that we can suspect years in advance of puberty as candidates. The dietary pattern at home will be heavily carbohydrate and low in protein. Whether or not this ultimately results in a secondary hypothalamic change is purely speculative. But there are good reasons other than the fear of obesity for suggesting from infancy on that carbohydrate not be increased at the expense of protein. In some infant feeding studies of ours a steady increase in protein with a corresponding drop in carbohydrate is accompanied by a steady fall in rate of gain in weight with a rise in nitrogen storage. In our studies of tuberculosis in the adolescent, recovery consistently correlated with nitrogen repletion, which commonly was accompanied by either failure to gain in weight or actual loss—a phenomenon typical of a shift from a diet high in carbohydrate to one high in protein. Accordingly, from infancy on I have constantly checked on dietary patterns and have encouraged the kind of prescription that will minimize weight gain, but encourage nitrogen retention. I think Mayer makes a real contribution in re-emphasizing the role of exercise, which was minimized by Newburgh.

I have tried to make a particular point of emphasizing the danger of entering the puberal spurt of growth already overweight because of the predeliction of this type for slipping of the upper femoral epiphysis. In a study of the calcium balances of seven of these we felt that a discordance between gain in height and weight, together with a failure to take vitamin D during a changing rate of growth, constituted a set of circumstances under which slipping occurred.

DR. SOLNIT. I think there are a group of adolescents who, with the advent of the adolescent changes, are interested in and motivated to make changes in themselves which, before that, they felt unable to do. This can be strengthened because they are in a position to utilize the relationship to the physician somewhat differently than they did at a younger age.

We have to realize that there are primary and secondary psychologic factors in obesity, as well as the physiologic ones. It is pretty clear that it is not specific enough to say that tension finds a pathway through overeating and is the cause of obesity. The effort has to be made to deal with the secondary factors, to begin with. For example, to help the teenager overcome in part the lowered self-esteem that has resulted from obesity.

If we could find out earlier what is leading to overeating or underexercise, perhaps we could be influential in helping the child find substitute satisfactions. Also we can help parents relate to their children in ways other than through excessive feedings.

The parents' role is essential. We have seen a number of instances

in which the anxiety created in the mother by the child's effort to diet was incredible. For such parents the loss of weight represented the risk of a serious or fatal illness in the child.

As the child becomes older and reaches into adolescence, he may be able, on his own, and through the relationship with the physician, to lose weight or stop gaining weight. What is more important to the patient are the secondary psychologic factors that Dr. Heald has referred to: how you feel about yourself because you are not acceptable esthetically to yourself or to others; the kind of social deprivation that occurs as a result of sensitivity to obesity; the type of depression that a child may feel because he is obese. These problems can be relieved by the interested physician, which Dr. Gallagher demonstrated in his anecdote. He said, "I'm Ros Gallagher"—I don't think everyone can say it that way to an adolescent and convey to him, on the one hand, the empathy and, on the other hand, an authoritative, accepting approach. I think we each have to find our own way to say "Ros Gallagher" when we meet with the teenager, whether we say we are Dr. So-and-so, or use our first name.

Obviously, this leads to the idea that if you are going to take a history on nutrition and activity, you can get a valid or an invalid history, depending upon what sort of relationship you have established with the teenager and his parents as you are eliciting the history.

Often the first interview is not the best time to obtain all aspects of the history.

It does seem that we should be careful to do no harm. When a child says, "I want to diet," we should assess the motivation involved. Dieting in adolescence occasionally precipitates an anorexia nervosa or a severe depression with suicidal attempts. This is not frequent, but it happens often enough to remind us of the potency of the forces within the child that are being expressed in the underexercise or overeating or in the combination of the two.

A clinic for adolescents has a number of unexplored possibilities, and differs from the private office contact with adolescents. These differences should be investigated in order to help us decide which adolescent with which problem is more likely to benefit from a particular setting.

DR. TYLER. I want to consider a cliché used in the treatment of obesity in adolescents. I have been trapped more than once by a psychologic approach alone, that is, by the idea expressed as "They know what to eat. Leave them completely alone, and they will regulate their weight." I think that the young child who is eating too little may eat adequately when we turn off the pressure. When we tell the adolescent to eat anything he wants, he frequently does just that, and continues to

gain. He needs help in planning a diet and then in motivating himself to use it.

DR. GALLAGHER. I think that is the kind of thing we have been harping on all along. We are trying to understand these people and what are the mechanisms involved and the problems involved in each one, without using any routine kind of prescription.

There is one type of adolescent we have not mentioned. This is the adolescent who deliberately eats a good deal to make herself fat because she is fearful about assuming what we call the adult feminine role. These often respond nicely to a doctor's interest and support.

Dr. Heald did not say much about this, but, as part of the examination of these people, he attempts to estimate their fat, as well as to determine their number of pounds. To do this, he uses this little pair of calipers; discreet pinches in a few places will yield the same sort of information.

DR. GREEN. I wonder if you have had experience with group therapy of adolescents who are obese?

DR. GALLAGHER. I do not know if I can satisfactorily answer your question about group therapy of obesity. We have had groups of parents of patients who had hemophilia. I felt I learned a great deal from them. I do not know if I helped them; I am sure they help each other.

One of our psychiatric colleagues has talked to us about his group work with delinquents. You all know much more about that than I do. Sometimes it is successful, depending, I suppose, on how well the group is selected and how skillful the person is. We have not done much because I think a person has to be specially trained and skillful at it; we are not. The other reason we have not done it is that our whole emphasis is on taking each doctor, general practitioner, pediatrician, and what not, and getting him to understand his patient. For the same reason we don't use self-administered history forms. Some people say, "Why don't you use a form for history? It will save time." We don't. We feel the doctor is going to learn much more by listening to his patient because he gets their feeling out of it, which I defy you to get out of the form. *It is not so much the facts, it is more the person's feelings about the facts.*

These are real differences between what we can or cannot do, and what can be done in the family doctor's office. In a clinic such as ours we have a sales job to do. We have to spend a lot of time and effort getting information which the family doctor and all who have known these people for ages can have in the back of his head or at his finger

tips, and we and our patient have to become acquainted. Furthermore, there is more anxiety about going to a clinic than there would be about going to a family doctor.

I suspect that there are definite advantages in going to the big center where the "experts" are. Patients don't regard me as only a country "doc" with a new address. There is all this aura around me, and it is of great help to them.

I cannot but think, however, that it is the person who sees the adolescent, and the way this person acts with the adolescent, which is of infinitely more importance than how much you know about him, or where your office is, or what the setting is like.

SUMMARY OF SYMPOSIUM

JULIUS B. RICHMOND, M.D.

I have thought of various approaches to summarize this symposium; however, none would do justice to the proceedings, which were rich and well planned. Also, this morning's discussion covered much of what might have been included in a summary. Thus I feel less obligation to summarize systematically.

In the few remaining minutes what I would like to do is to try to present my reactions, as a pediatrician interested in teaching, to the significance of this symposium. In a way, I suppose this could be classified as editorial comment. Since editorials are largely idiosyncratic —and often biased—these comments can be discounted as much or as little as one might like.

I think that the organization and conduct of this Symposium on Adolescence, by a Department of Pediatrics interested in teaching general pediatrics and interested in pediatric research, is an important manifestation on the American pediatric scene. It is not often that a specific period of growth and development becomes the object of intensive pediatric curiosity and inquiry. Historically, for a variety of reasons that we cannot go into, Pediatrics developed along the lines of specialization and subspecialization in specific diseases and organ systems. Except for a few people interested predominantly in newborn infants, we have had relatively few people—like Drs. Gallagher and Johnston—who have had the courage to take, as it were, a "slice of life" and look at it more deeply.

Some analogies with the theater were made earlier this morning. We might point out that the playwright Chayevsky, in his recent dramatizations, has used this "slice of life" technique in the theater with great effectiveness. In pediatrics, we need to direct our attention in this kind of approach—for the advancement of knowledge and the better care of our patients. It must be gratifying to people who have pioneered in the area of increasing our interest in and understanding of growth and

development, such as Dr. Senn, to observe the interest in a symposium of this sort.

I would like to pick up a point Dr. Gallagher made somewhat earlier this morning; that is, his reference to the group in his unit as generalists rather than specialists, and referring to his consultants as the specialists. This may appear to be semantic quibbling, but I want to take it up because I think it has some importance—if Dr. Hollingshead would pardon me—in relation to the social role occupied by the pediatrician.

I think there is a great deal of concern, on the part of pediatricians in the United States currently, that they are generalists and not specialists. I think it is important that we view our interest in and study of growth and development of the human organism as being just as specialized as the study of any organ system or any specific disease, or the study of an ion in any body compartment. I prefer to look at the pediatrician as *the* specialist in growth and development, *the* specialist in individual differences, *the* specialist who looks at the biologic as well as the social and psychologic and cultural aspects of the child's development, and integrates these into a whole. The people in our departments of pediatrics who go beyond this and develop more specialized interests I prefer to view as subspecialists. In other words, the pediatrician is the specialist. If he wants to go beyond this and develop other, more narrowed areas of inquiry, this is certainly desirable, and most research is accomplished today by people with subspecialized interests. We cannot turn the clock back and say that we must all remain generalists. I think we should recognize that the individual who makes inquiries into growth and development is a person who is pursuing a specialized interest. If we do not develop this self-image, I fear we tend to develop a feeling of professional identity diffusion, to paraphrase Erikson, which is characterized by the pediatrician's not knowing whether he is or is not a specialist.

Also, although Dr. Gallagher rather jocularly refers to what he does, in his relationship with patients, as amateur psychotherapy, I would like, in spite of his modesty, to delete the word "amateur," because, in terms of the context of their work, in the kind of relationships that he and his group make with adolescents there is nothing amateurish. I think we tend to relegate what we as pediatricians are doing to a secondary status because, in terms of more formal psychotherapy, it does not appear to have depth. But at the level at which we function, at the level at which we contact and communicate with adolescents and their families, this is a significant and meaningful relationship which has just as many skills and requires just as much resourcefulness as does psychotherapy at a deeper level.

What Dr. Gallagher talked about this morning are the *little* things

that make the *big* difference. The things that we ordinarily think about as being day-to-day, commonplace clinical experiences and as being relatively routine and insignificant, are the little things that make the big difference. The kinds of things Dr. Gallagher was talking about, how he organizes his clinical setting, how he approaches patients, how the nonprofessional staff of the clinic is selected, and how they approach patients, these all add up to the little things that make the big difference.

These are the things that we need to inquire into much more intensively. Fortunately, with methodologic advances, particularly in the social sciences, we should now find it possible to engage in many more objective studies of these relationships; particularly, we may be able to study the deeper roots of the kind of relationship that we establish in the clinic. Such studies should provide us with a fuller and deeper understanding of theory and practice in the pediatric setting.

One of the questions put to Dr. Gallagher earlier, one which Dr. Johnston raised this morning, is intriguing: Is a clinic for adolescents really the answer? Is it necessary? Or do we have greater advantages, as individual physicians, observing the child over a period of years?

In a way, these alternatives symbolized the organization of this conference, which started out with Dr. Shaw's presentation of the individual practitioner's approach to an understanding of the adolescent, in terms of his long experience with the child, and ending up with the presentation by a group specializing in the study of the adolescent.

I do not think that one can propose one point of view to the exclusion of the other. Further, I think that we need to be concerned lest we develop any kind of faddism in the organization of medical care and teaching and in the organization of research. I think that we need both approaches because, as one sees a group in a specialized clinic, inquiring into one age period with the intensity of Dr. Gallagher and his group, we are destined to learn a great deal more about this age period. Even though it is somewhat of a cross-sectional approach, the sensitivity of the group to earlier developmental experiences, biologically as well as psychologically, need not be as limiting as proponents of longitudinal studies might think.

On the other hand, longitudinal studies, such as those of the Child Study Center at Yale, the Child Research Council at Denver, the Fels Institute at Antioch College, and the University of California group at Berkeley as examples, which are making intensive inquiry into the longitudinal development of children and their families, are equally important.

I would hope that in this country we would not succumb to conformity and faddism in our teaching and research programs or in our

approaches to medical care, to the point at which we look for one or another program as the only answer. I think that we can look toward contributions from each and, more importantly perhaps, to other imaginative approaches in the study of this age period.

Without depreciating the contributions of Dr. Gallagher and others, I venture to say that, in the next decade, we will have many other imaginative approaches to an understanding of what is going on in adolescence.

This brings me to the point that has been emphasized repeatedly in this symposium, the fact that we really do not know enough. No matter whether we discuss the biology of this age period, its psychology or sociology or cultural anthropology, we keep moving toward the frontier of knowledge. I am not concerned, along with Dr. Rabinovitch, about whether we are 50 years behind or ahead of each other in one or another discipline, as we view our problems. The important thing is to define the frontiers as of now. Even though the biologists may use the calipers and the balance and the biochemical laboratory as their quantitative tools, they too have frontiers. Thus, in the discussion of physical growth in adolescence, Dr. Sobel expressed her differences concerning the role of androgens. She could have expressed more, I think, concerning the role of growth hormone. Thus problems remain even in fields in which there have been striking methodologic advances. Dr. Hollingshead's quantitative tools are just as precise at the level at which he is operating as are the biologist's at his level. The important thing, it seems to me, is that we meet the frontier where it is in each of the areas of inquiry, and that we push it back.

There are, perhaps, certain aspects of adolescence that we might have emphasized a little bit more in this conference. I think those of us who are pediatricians are like the old fire horse hearing the gong sound, when we hear physical illness in adolescence mentioned. I think some of us might have been interested in dwelling a bit more on this. But I think that we need much more data about physical illness in this age period. Since time has been limited, we have not discussed physical illness as much as we might have.

Dr. Shaw introduced a rather interesting point in the discussion yesterday when he said we did not discuss a variety of handicapping conditions in adolescence, but rather concentrated on mental retardation. We did not, because of the complexity of the problem of dealing with them all, and this might reduce us to dealing only in generalities. But I think he raised a very important matter in connection with our contact with families who are encountering handicapping conditions or crises of any kind in their adolescents. As pediatricians we need to have some capacity to deal with the immediate crisis, and to be accepting, in a way that Dr. Gallagher described this morning, of the

adolescent and of his family in the face of adversity, and not to be rejecting because they do not understand or cannot integrate all that we have to tell them at one sitting.

Since many of us grew up in the "formula and shot" era of pediatrics, we are accustomed to providing some factual information and giving advice. As a consequence we often find it difficult to deal with families when they cannot accept all that we have to offer them, all that we have to tell them. And *time,* I think, is something that we have not learned to use to greatest advantage, because in the pediatric relationship, it seems to me, what we have is continuity in our contact with families. We have the relationship of the pediatrician with the family over a period of *time* to help the family integrate their problems into their daily living.

In pediatrics we are in a favorable position to understand how families deal with crisis, how they master the daily problems of living, how they integrate these experiences into their functioning, and how they grow as families. I think there is almost no other professional group that has the opportunity to look into the biologic factors associated with growth, and to integrate these with social, psychologic and cultural factors in the way the pediatrician has done. This interpretation has been applied largely to clinical practice. We have been relying on our intuitive impressions mainly. I would hope, as better methods become available, we would be resourceful in integrating research approaches from the social and psychological sciences into our pediatric research, so that we can have better understanding of what really is going on in these families, and what is going on in our relationship with them.

In all clinical investigation what we strive to do is to narrow the gap between guessing and knowing. What I am suggesting is that in this area, too, we try to narrow this gap between what is clinical intuition and judgment and guess, and knowing.

I was very heartened by the lively discussion about the administration of thyroid. It indicates that even there we have not narrowed the gap enough to the point at which we can say now we know and are not guessing. But we will narrow the gap there, and I hope we will narrow it in other areas.

One final point in terms of a philosophy, so far as the pediatrician is concerned. I think the pediatrician has to have a philosophy of hope in the sense that Dr. Gallagher mentioned earlier. As we look about in our culture, and as we see families dealing with cultural change, and particularly with conflicts between their value system and what they see prevailing in the culture, I think the pediatrician needs to have a philosophy which offers hope to families: hope that if they pursue what we regard as democratic values and standards, the society will

move more in the direction which will reflect those standards and values. This is important to me, because I believe our culture won't reflect these standards and values, if we, as well as other professional people, are not prepared to offer more leadership than we have done in the past. I think this is our responsibility as professional people in a democratic culture.

I cannot close without expressing deep appreciation to Dr. Meiks and to his staff here for the excellent arrangements they made. We have been comfortable and most pleasantly taken care of.

I would also like to express appreciation to those who made possible the grant for this conference, particularly for the enlightened way in which it was made. The complete freedom which was provided to the Department of Pediatrics here, with no strings attached, in the conduct of this conference was most fortunate. At a time when grants are not always made in such an enlightened fashion, it is a real pleasure to express our appreciation.

DR. GALLAGHER. Thank you, Dr. Richmond, and thanks, everyone.

DR. MEIKS. I do want to say that this has been, I think, one of the most interesting and pleasant three days I have ever spent, and that you all have honored us greatly by coming here and participating in this conference. I tried to define the objectives of this symposium the other morning, and it seems to me that we have achieved these far beyond anything we could reasonably have expected. For this, we are deeply grateful to all of you. Thank you very much.

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